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Vol 5, no 1

YEAR \$1.50

APRIL, 1912

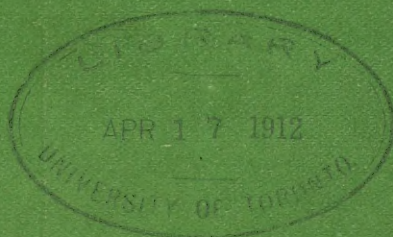
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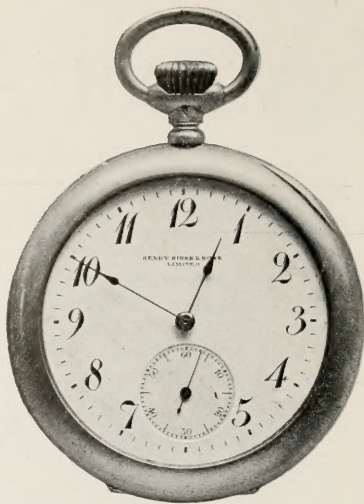
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FORT GEORGE

As a Manufacturing Centre

(Vancouver News-Adv., Jan. 18.)

The great possibilities of some of the points in the Central Interior of this province as manufacturing centres are becoming better known every day from the reports brought down by those who are engaged in investigating the resources of the North. Not least important among the factors that will make up the industrial growth of some of these new centres are the water powers which are found in close proximity to raw materials.

A report has just been filed at Victoria on water power of the Willow River, about seventeen miles east of FORT GEORGE. The Willow River is a tributary of the Fraser, entering the latter river about twenty-five miles above the junction of the Nechaco with the Fraser. The Willow Canyon is located about thirty miles above the mouth of the river and is approximately due east from FORT GEORGE, a distance of some seventeen miles.

The canyon is formed from a huge mass of soil and igneous rock that is about 12,000 feet or a little more than two miles in length, with walls as high as 250 feet on either side. There are really two distinct canyons, although both are really a part of the same large one. In the bottom of each of the two at low water the river varies from ten to sixty feet in width, averaging about forty feet, and in some places as deep as twenty feet. The vertical fall from water level at the head to water level at the foot is approximately 200 feet. At this canyon it is proposed by the FORT GEORGE Power Company, Limited — a company which has undertaken the work of development—to develop cheap power for manufacturing and other purposes. Several tests have been made; one at extreme low water in August last, showing a flow of 250 second feet. In the development scheme a dam is planned to create a service reservoir which will be the means of maintaining a constant head of water on a turbine to be installed in a power house situated on the lower face of the dam. In addition to this, a smaller dam, placed near the middle of the upper canyon, will create a local storage reservoir covering approximately two square miles to an average depth of about thirty feet.

According to the report, 40,000 or 50,000 h. p. might be obtained with sufficient storage.

This Willow River power is the only feasible, available power within reach of FORT GEORGE and vicinity, and as such it is tremendously important to the growth of that future metropolis. With abundant power adjacent to the city that must be the centre both commercially and industrially of the central interior, a great deal has been added to the prospects of FORT GEORGE as a manufacturing centre.

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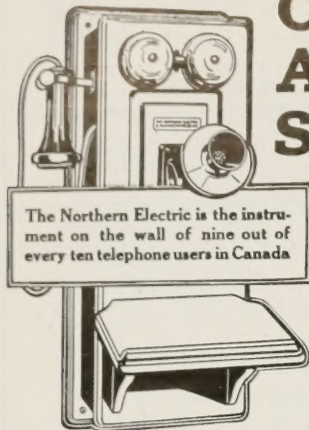
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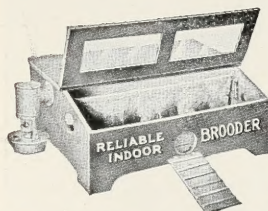
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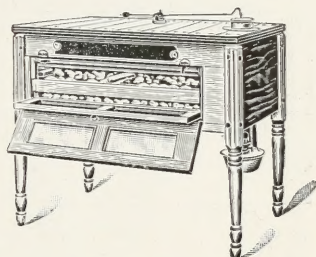
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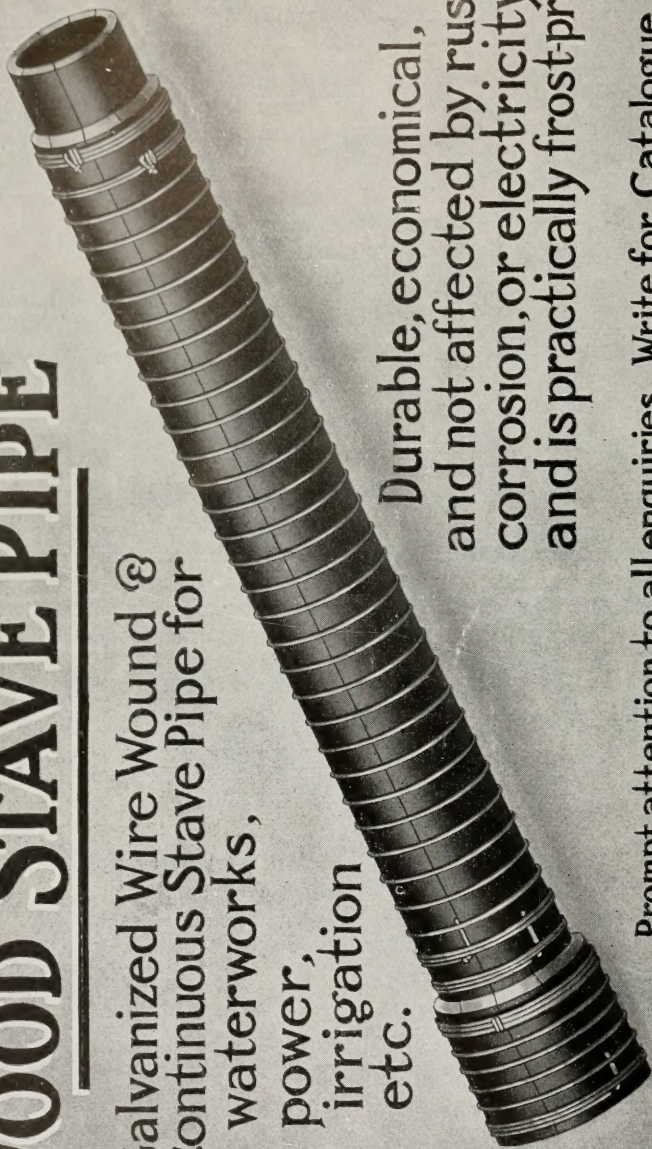
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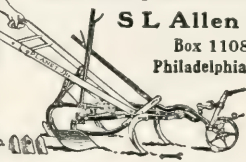
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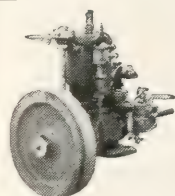
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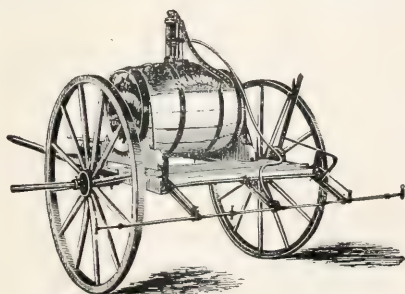
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THE FRUIT MAGAZINE

Scientific Farmer and Canadian Citizen

VOL. V

VANCOUVER, APRIL, 1912

No. 1

Summary Report of the Fruit Industry of Canada

BY W. H. BUNTING

Read Before the Third Dominion Fruit Conference, Ottawa, Ontario, February 14-15-16, 1912

I desire in this paper to present a short summary of the present status of fruit growing in this country, to outline some of the conditions under which it is being carried on, and to call attention to the extent and importance of the industry in the several Provinces, to some of the difficulties which have been encountered, as well as to the success which has attended efforts to combat and overcome many of these obstacles. In addition, an attempt has been made to emphasize the great possibilities awaiting intelligent, aggressive effort in enlarging the area now under cultivation and in raising to a higher standard the quality of the fruit already being produced, both as regards appearance and intrinsic merit.

I can only hope, however, in the time at my disposal, to call your attention briefly to some of those outstanding features of the situation which have impressed me most strongly during my recent trip of enquiry and investigation.

I trust that the more complete and detailed report of my itinerary for the past few months, which is in course of preparation and which will no doubt be placed in your hands as soon as published, may be of service in furnishing the general public who may be interested, additional information of a useful character on this important subject.

I have had an opportunity, by direction of the Honourable Minister of Agriculture, to visit during the last six months every Province of the Dominion in order. In the course of this trip I have come into personal contact with a great many representative fruit growers

in the different Provinces, have visited them in their homes, have looked over their orchards, and have discussed with them many of the features of the industry as it is being carried on under varied conditions.

I wish at the outset to express appreciation for the cordial reception given me, and the interest displayed in my mission by these gentlemen. The officials of the various Provincial Departments of Agriculture, of the Agricultural Colleges, and the Experimental Farms, as well as the members of the Staff of the Fruit Division, have without exception taken every pains to make my trip pleasant and to facilitate the securing of such information as I sought. I am also deeply indebted to Mr. J. A. Ruddick, the Dairy and Cold Storage Commissioner, under whose direct supervision I have been working, for much valuable assistance, it being at his suggestion that the enquiry was instituted.

The Province of Ontario, on account of its geographical position, its large areas of suitable land, and its general adaptability for fruit culture, is of course easily the most important Province in the Dominion from the standpoint of the fruit industry, commercially and otherwise. This Province comprises four out of the ten districts which have been outlined by Mr. McNeill, Chief of the Fruit Division, for the purpose of defining fruit growing conditions and production throughout the entire Dominion. These four districts, while differing in themselves and from each other, are all extremely important. Every one of them produces large quantities of fruit of a varied character. In addition to supply-

ing an extensive local demand, these fruits must seek an outside market for the immense surplus grown annually.

A short description of these districts may be in order, so that we may obtain a better idea of the Province as a whole. Their location may be briefly described as follows:

DISTRICT 1. Counties bordering on the north of Lake Erie from Niagara River, including Western portion of Lake Ontario, to Detroit River and Lake and River St. Clair.

DISTRICT 2. Counties on Lake Huron inland to York, with the exception of parts of Wellington, Grey, and Waterloo above the 1,000 foot contour line.

DISTRICT 3. Counties bordering on Lake Ontario, north to Sharbot Lake and Georgian Bay.

DISTRICT 4. St. Lawrence and Ottawa Valleys to Lake St. Peter and a portion of Southwestern Quebec.

These are simply arbitrary divisions and do not differentiate the localities as being entirely distinct from one another as a whole. In fact they merge imperceptibly one into another at their boundaries, and can only be referred to as outlining in a modified way the general characteristics of the sections of country included.

District No. 1, in addition to large orchards of apples, pears and plums, contains the major portion of the commercial peach orchards and grape vineyards of the Dominion. It is also largely devoted to the production of cherries, both sweet and sour, small fruits of all kinds, and early vegetables, as well as supplying the greater portion of the products required by the large number of canning factories stationed at strategic points from one end of the district to the other.

This district has been the scene of many changes during the past decade. The infestation of the San Jose scale at several important centres has led to the decline and destruction of many of the large apple orchards for which it was formerly noted. This condition has turned the attention of the people to the increased planting of such fruits as are not so susceptible to injury from this cause or are more easily protected. In some cases, where conditions warranted, the production of early vegetables on a large scale has also been undertaken and has been followed up with splendid results.

Experience gained in the treatment of this once dreaded insect has, however, reached such a stage that its presence is now looked upon more as a salutary tonic than an un-

mixed evil, from the fact that it compels better and more careful methods of orchard treatment if a healthy existence is in any degree to be maintained. It having been clearly demonstrated that even large apple trees could be successfully protected against this enemy, and brought into splendid condition for the production of high-class fruit, far-seeing orchardists at once began, with very gratifying results, an active campaign to care for these orchards which were not too severely injured, or in which a foothold had not as yet been obtained by the insect. Confidence has now been restored, a magnificent market is opening up, and the increased planting of apples, as well as other fruits, is now going on apace in this district.

Advantage should be taken of the fact that fruit ripens considerably earlier throughout this territory than elsewhere, and prospective planters would be well advised if a considerable portion of their plantings were of the better sorts of the earlier varieties of apples, and of those fruits which will carry well for considerable distances. This would enable them to supply more fully the western prairie markets with the fruit required during the summer and fall months, a considerable portion of which is at present being imported from the United States. If the cold storage facilities, which are available on the ocean steamships, were fully utilized, an extensive trade could no doubt be also developed with the English market, in early, fancy, well-colored fruit. This has already been demonstrated by the trial shipments of peaches and early apples which have been made during the past few years by the Dominion and Provincial Departments of Agriculture, as well as those of private individuals.

Notwithstanding that greatly increased plantings of peaches, pears, plums, cherries, grapes and small fruits have been going on throughout the district each year, the demand for this class of fruit has more than kept pace with the supply. In consequence prices have been advancing and all good fruit offered is being quickly purchased by eager customers. This situation has caused a very great activity in fruit lands in favored locations, and it has become a question whether this feature is not being overdone at the present time, to the detriment of legitimate investment.

District No. 2 covers a large territory, whose residents are for the most part engaged in mixed farming, with an apple or plum orchard as subsidiary to the main activities of the farm. It is extremely gratifying to note,

however, that as a result of the educative work that has been undertaken by the Provincial Department of Agriculture through its Fruit Branch, a very large number of men in this district have had their attention emphatically called to the great possibilities for profit that are lying dormant in a hitherto comparatively neglected portion of their farms. A widespread interest is now being taken in connection with the production of better fruit, by many of the people. Considering the extent of territory involved, this district offers splendid conditions for an almost unlimited supply of the best late-keeping varieties of winter apples, in addition to many varieties of other fruits.

District No. 3 contains the major portion of the extensive orchards of winter apples of standard varieties, and has done much to establish the reputation which Canadian apples enjoy in the export markets. In common with districts 1 and 2, an active campaign is in progress to improve the quality of the fruit now grown and to increase the orchard area.

Districts 2 and 3 are capable of becoming the most important producers on the American Continent of high class, long-keeping winter apples. This opportunity, if fully taken advantage of, should result in such a condition of prosperity and contentment that instead of the rural population of Ontario showing a decrease from time to time a very marked increase should take place in exact ratio as the public becomes seized with this fact. It is generally admitted that fruit growing, properly conducted, provides for the profitable employment of a larger number of persons during a longer season than almost any other phase of general agriculture.

In District No. 4, owing to the winter season being more severe and protracted, the standard varieties of winter apples, such as the Spy, Baldwin, Greening and King, do not succeed as a commercial proposition. Fortunately, however, there is a class of apples of the highest quality for which this district is noted. These varieties are in great demand, and from their hardy, vigorous nature grow to perfection and produce bountifully. This district is the home of the Fameuse, Scarlet Pippin, McIntosh Red, St. Lawrence, Alexander, Wolf River and Wealthy. It is to be regretted that there is not at the present time the activity and enthusiasm that should be in evidence towards maintaining the prestige that the St. Lawrence and Ottawa Valleys and the southwest-

ern townships of Quebec have gained for the production of these splendid apples. Unusual circumstances have conspired to give many of the finest orchards in this district a serious setback from which they have not been able to entirely recover. New plantings are not being made with sufficient rapidity to replace these declining orchards and there is grave danger of a serious shortage in production in this part of Canada unless active measures are taken to correct the situation. A survey of some of the magnificent orchards that are still to be found and which are being handled under careful, approved methods, should be sufficient to inspire confidence in the younger men who have farms adapted for this purpose, and induce them to at once begin the planting of orchards to replace some of those which are passing away. There is perhaps no district in the Dominion to-day where an aggressive educational campaign is more necessary or desirable than in this particular territory.

In addition to the general and widespread interest that has been developed in better fruit growing, the problem of more satisfactory methods of fruit selling has been carefully considered by many of those in Ontario who are engaged in the distribution of the product. To accomplish this in a profitable and successful manner, various methods have been made use of, and some important agencies have been established in recent years. So long as the individual grower consigned his fruit in a haphazard way to the nearest market, regardless of its ability to absorb the supply, or to the first commission man who might solicit his shipments, without any knowledge of his standing or reliability, there was likely to be loss and disappointment. This lack of system is being rapidly replaced by more satisfactory methods of direct sale. For instance, the grower in many sections is disposing of his product at the shipping station for cash, to buyers who are handling quantities of fruit every day and are in close touch with the market. Or he may, by regular quotations, establish a trade with the retail merchants or consumers in more distant towns and cities. Better still, he can, through the medium of strong co-operative societies of neighbouring fruit growers, secure all the advantages of unity and systematic organization, keep well informed as to the present market and future prospects, obtain better and cheaper transportation and in many ways obviate a large percentage of the losses and vexations of the old ways of selling. This

could never be accomplished by the individual working alone, and independent of his neighbours.

In the districts already referred to, there are a number of sections in which fruit growing has become an important specialty, and in which every means is being taken by the great majority of those engaged in the business, to secure the latest information and adopt the most modern methods to achieve success. Unfortunately this class does not at the present time constitute a majority of the fruit growers of Ontario,—possibly not more than twenty-five per cent. of them. The other seventy-five per cent. are scattered all over the Province and have planted an orchard, or are engaged in growing fruit, as a secondary proposition, supplementary to general farming or some other line which is their principal occupation, and in consequence have neither time nor inclination to give their orchards proper care or attention. In sections of this character the "lump" orchard buyer of the past has found a profitable field for operation. As the primary object was to buy as cheaply as possible, and having secured the crop to put out—I will not say pack—as many barrels as by hook or crook could be managed, there could only be one result. Many of the complaints of the inferior packing and grading of Ontario fruits during late years have arisen largely from this state of affairs, and from lack of proper appreciation of the care necessary to handle and transport fruit in good order, by those through whose hands it must pass on the way to market.

A strong public sentiment is now being created among the growers themselves which will not tolerate careless or indifferent or dishonest methods of packing and grading fruit for shipping purposes. This sentiment ought to do very much towards raising the standard of Ontario fruits, so that the claim frequently made that Ontario can produce the finest fruit grown on the continent may be amply justified.

In the Niagara Peninsula, in the counties along the north shore of Lake Erie, in the districts bordering on Lake Huron, and also along the entire north shore of Lake Ontario, there has been a very considerable activity during the past few years in the increased planting of all kinds of fruit. This has been occasioned largely by the recent discovery of the valuable qualities found in lime, sulphur and arsenate of lead combined in a general spray mixture for the practical control of the majority of insect pests and fungous diseases

which affect fruit trees. Although the proven efficacy of this spray has but recently been established, it is rapidly taking its place as the most important discovery of late years in the progress of horticultural knowledge. The insistent demand for all the fruit which can be produced has also done much to awaken this activity and accentuate it, until at present it is taxing the facilities of the nurseries to supply this country with trees and plants of the standard fruits.

I have referred to the co-operative movement among the fruit growers of Ontario. I believe the first organization of this kind in the Province was that known as the Niagara Peninsula Fruit Growers' Stock Company, which was formed some twenty-five years ago by those veteran fruit growers, Mr. A. H. Pettit and E. J. Wolverton and the late A. M. Smith, Murray Pettit and Dennis Van Duzer. The latter three, although no longer with us, are honored and remembered as pioneers of the earlier days.

This Company was formed under a Dominion charter for the purpose of establishing reliable agencies to dispose of fruit to advantage, as well as to join in the assembling of carloads of fruit for shipment to the north-west and the Maritime Provinces. It maintained a useful existence for many years until it became superseded by local associations in closer touch with the several districts covered.

The pioneer, however, of the present long list of co-operative associations in active operation may be said to be the St. Catharines Cold Storage and Forwarding Company. Organized in 1897, the outcome of a condition of affairs which was becoming intolerable, it has steadily grown in scope and importance until at the present time it is one of the largest, if not the largest, and most successful company in the province handling fruits and produce in a co-operative way. The success of this company has led to the formation of many others modeled on the same or similar lines, in various parts of the province, the majority of which are securing excellent results. With careful, competent management and loyalty of the members to one another, these associations should be able to solve many of the problems of successful distribution.

A new feature of the Association or Company activity has been in evidence during the past season, the outcome of which is being watched with considerable interest. This movement consists in the organization of companies, with more or less capital, for the pur-

pose of purchasing, or leasing for a number of years, orchards in various parts of the country, it being the intention to care for these orchards in accordance with the most approved methods. Should these companies prove successful, the several orchards so handled should prove splendid object lessons to the surrounding country.

The Provincial Government has taken an active interest in horticulture in Ontario. A fruit branch has been formed, with Mr. P. W. Hodgetts as director; an experimental farm has been established in the tender fruit area, the gift to the province of Mr. H. F. Rittenhouse of Chicago, who, an old Niagara district boy, has not forgotten the place of his birth. Some good results are expected in the course of time from the work conducted on this farm. The Ontario Horticultural Exhibition has grown from very small dimensions a few years ago to one of the largest annual displays of apples on the continent, second only to the National Apple Show.

If those of us who are engaged in the fruit in Ontario will rise to the dignity of the situation, and by every means in our power seek to put our product on the public market in such a manner as will remove every cause for complaint due to careless and indifferent packing and grading of what might otherwise be a high-class product, there is a bright future in store for the fruit-growers of the premier province in the Dominion.

The province of New Brunswick and the northeastern portion of Quebec is included in District No. 5. I looked forward with a great deal of interest to a visit to New Brunswick, as I had heard so much of the St. John Valley and the opportunities for fruit-growing which were just beginning to be realized by the residents of this beautiful district.

Fruit has been grown for a good many years in considerable quantities in the counties included along the valley of the St. John river and in portions of Charlotte, Albert and Westmorland, and many fine orchards attest the capabilities of this province to produce fruit of splendid color and quality. The late Francis P. Sharp was probably one of the first to undertake the growing of fruit in anything like a commercial way in this province. He was an enthusiastic, enterprising investigator, and with wonderful optimism undertook many years ago to secure, develop and plant fruit on a large scale in Carleton county. The result of his work is still to be seen in the vicinity of Woodstock. It is only within recent years, however, that definite data have

been secured and made available to the general public, as to the varieties of fruit which may be planted commercially with every confidence and hope of profit. The Provincial Government, through the Secretary of Agriculture, Mr. W. W. Hubbard, and the Provincial Horticulturist, Mr. A. G. Turney, both of them active and enthusiastic men, has put new life into the New Brunswick fruit industry, and this province is now taking active steps to fill its proper place as an important fruit-producing section.

No finer strawberries, raspberries or other small fruits are grown anywhere in the Dominion. The list of apples recommended for New Brunswick covers the season and provides a class well suited for export shipment, as well as for supplying the local markets. With cheap and rapid transportation by water, an over-seas market very close at hand, with plenty of suitable land at a very moderate cost, with the knowledge that has been secured as to the proper varieties, and with the active co-operation of the government, the success of New Brunswick as a fruit-growing area seems assured.

Districts 6 and 7 are included in the province of Nova Scotia. District No. 6 comprises the counties of Hants, Kings, Annapolis and Digby, extending from Windsor on the east to Digby on the west, an area about 100 miles in length and five to fifteen miles in breadth, popularly known as the Annapolis Valley. This territory, on account of its peculiar and favorable location along the south shore of the Bay of Fundy, is extremely suitable for the production of many of the standard apples and other fruits, and as an additional advantage it is adequately protected from winds and ocean fogs by a range of hills on either side, known as the North and South mountains.

In some parts of this district the cultivation of the apple began very early, and magnificent trees which have passed the century mark are still to be found producing crops of fruit. As the success of apple culture became assured, the people began to increase their orchard planting rapidly, until at present, considering the territory involved, no portion of the Dominion has larger or more important orchards within a given radius.

In the vicinity of Waterville, Berwick, and in other parts of this valley there are large areas of virgin soil that can be obtained at very low cost. While a considerable portion of this land is covered with a second growth of birch, alder, spruce and other small trees,

it can be quite easily cleared and profitably utilized for fruit-growing, as an inspection of the fine orchards in the immediate neighborhood will clearly demonstrate.

It has been estimated by experienced men that not more than ten per cent. of the available fruit land in this entire valley is being utilized for that purpose. The balance, outside of the dyke lands and an occasional improved farm devoted to mixed farming, lies fallow and waiting the advent of those who will develop it and repeat the successes of those who have done the pioneer work.

A splendid field lies open in these cheap lands, which may be purchased from ten dollars per acre upwards, depending upon the location. It is somewhat amazing that for years these opportunities have remained unimproved, while thousands of settlers have passed on towards a more distant and alluring goal. It is also to be regretted that many of the younger generation, drawn by the attraction of city life, or the stories of great wealth to be obtained so easily elsewhere, have abandoned a sure means of obtaining a comfortable livelihood in this beautiful valley, for an uncertainty and, in many cases, a disappointment. Many other fruits besides the apple do well throughout this valley. Bountiful crops of pears, plums, cherries and small fruits are produced in many places; and as there is a very good market for all of these, their production might very profitably be extended.

District No. 7 comprises the remaining portion of the province, and includes many sections where fruit is being produced with more or less success. In the neighborhood of Bridgewater some very good orchards were observed, and along the southern shore there are many thousand acres of blueberries, while cranberries are also being cultivated with considerable success.

Near the town of Truro and in portions of Pictou county the hardier fruits, if given care and protection from severe winds, will succeed fairly well. Further work should be undertaken to more fully demonstrate the range of fruits likely to prove suitable for this and similar areas.

An important feature, peculiar to the Nova Scotia fruit belt, is the large number of apple storage warehouses situated at every shipping station throughout the Annapolis Valley. Over eighty of these have been erected with a capacity of from 2,000 to 10,000 barrels each. The fruit is usually handled direct into barrels in the orchard and rushed to these

warehouses where it is re-packed during the fall and winter seasons and shipped out whenever a favorable opportunity offers.

Owing to comparative nearness to the British markets, the great bulk of the surplus fruit is exported. The past season, however, has been a record one, both for volume of the crop and quality of the fruit, and has seen the western markets invaded for the first time. Nova Scotia Gravensteins and other varieties found their way not only to Winnipeg and the large prairie towns and cities, but even as far west as Revelstoke and Kamloops in British Columbia.

On account of the lack of regular and frequent sailings of ocean steamships from Halifax, the transportation question during the early fall months is a serious one, and if possible some remedy should be found. This condition does not apply to the shipping facilities during the winter, when the sailings are regular and frequent. It is during this period that the great bulk of the crop is marketed, and it is therefore desirable that the planting of only the best varieties of winter fruit be encouraged.

While many Nova Scotia growers are specialists and are handling their orchards in a careful, systematic manner, a more widespread campaign for the adoption of the best methods of orchard practice would greatly enhance the quality of the product and the profit to be derived therefrom.

Prince Edward Island comprises District No. 8. On this beautiful island there are a few wide-awake fruit-growers, of which Mr. A. E. Dewar of Charlottetown, Frank Boyer of Bunbury and John Annear of Lower Montague may be considered types. These men and a few others who might be mentioned have orchards of apples and plantations of small fruits of considerable importance. Their success proves conclusively that if the people of this district were thoroughly aroused to the splendid opportunity before them, then the increased planting of fruit would be undertaken with energy and vigor.

Complaints are made by many who have orchards that there is a lack of buyers and means of despatch for the crops already produced. It is claimed that it is useless to spend time and attention on a crop that cannot readily be turned into money. The people as a whole have not as yet become fully impressed with the fact that by a comprehensive scheme of co-operative effort, and by careful attention to the details necessary for the production of fancy fruit, they would find their

product in the very greatest demand at profitable prices, and their energies would be taxed to supply it.

Small fruits of all kinds succeed admirably here, particularly strawberries, and their increased cultivation might be safely encouraged. Very active and earnest efforts to improve the situation and to awaken an enthusiasm among the people have been made by Mr. Theodore Ross, Secretary of Agriculture, Mr. A. E. Dewar, President of the Provincial F. G. A., and Mr. Clark, Superintendent of the Experimental Farm, and it is to be hoped that their efforts will be crowned with success. A trained specialist who could devote his entire time as a field horticulturist among the people on their farms would be able to do a great deal of useful and profitable work in this Province.

It is a far cry from Prince Edward Island to British Columbia, in which Province we find districts 9 and 10. On our way westward we will look for a moment at the experimental work that has been carried on at Dunston in Southern Manitoba by Mr. A. P. Stevenson, another of those unselfish and indomitable pioneers in the Canadian Fruit Industry. Settling here in 1874 Mr. Stevenson at once began his career as a fruit-grower under very adverse conditions. Frequent and continued failures did not deter him from the object in view. He struggled on and after disappointments which would have caused many men to give up in despair, he has succeeded in establishing an orchard of hardy apples, and in bringing together a collection of other fruits which would do great credit to more congenial surroundings. During the past season Mr. Stevenson has had over sixty barrels of very fine apples of various kinds from his orchard, in addition to considerable quantities of plums, cherries and small fruits. He is establishing a nursery in which he proposes to propagate stock of the various fruits which, from his experience, he considers most desirable for the prairie districts and he has already distributed to his neighbors and others trees and shrubs which are succeeding very well in numerous places. From a careful observation of this section and from diligent enquiries made, there seems no reason why Mr. Stevenson's success might not be repeated many times over in the north-west by men who would undertake it with intelligence and energy.

Dr. William Saunders, while Director of the Experimental Farms, took a deep interest

in the investigation of hardy fruits that might withstand the severity of the northwest winters. In the course of his work there have been produced a large number of varieties of apples which have had for their parentage the wild Siberian crab—*Pyrus baccata*—crossed with some of the hardiest and best sorts grown in Ontario. This work has proved very promising and is now being continued with a large number of second crosses, under the direction of Mr. W. T. Hacoun, Dominion Horticulturist. A great many of these trees have been sent out to the Experimental Farms at Brandon, Indian Head, Lethbridge, and other stations, and have also been placed in the hands of many individual farmers for further testing. Considerable success has been achieved and it is expected that some of least of these hybrids may prove valuable and worthy of extended production.

Small fruits of various kinds grew wild in abundance in many parts of the prairies, and in some cases considerable progress has been made in their cultivation, especially strawberries. This applies particularly to the vicinity of Edmonton where some good results have been obtained. There is a wide field open for experimental work in connection with these fruits in Manitoba, Saskatchewan and Alberta, which will no doubt be undertaken as the country becomes more densely populated.

Conditions are varied in British Columbia and are very different to those which obtain in Ontario and the eastern Provinces, complying more nearly with such as are to be found south of the line in Washington, Oregon and Idaho, states which have gained a wonderful reputation during the past few years for the production of enormous quantities of fancy, high-coloured apples, as well as other fruits.

District No. 9 comprises what is known as the Lower Mainland and the Islands of the Coast, of which Vancouver Island is much the largest and most important. This area is characterized by a mild climate for the most part, with a very considerable humidity and great precipitation during certain seasons of the year, the total rainfall at Vancouver averaging about 70 inches annually. For this reason and on account of the great fertility of the soil, small fruits do exceptionally well all through this territory. For the same reason the range of tree fruits is somewhat limited, and the varieties

chosen for planting must be selected with care in order to be successful with them. Several varieties of apples, pears, plums and cherries do very well, more particularly the earlier kinds of apples and those stone fruits not, susceptible to brown rot. Some very fine orchards are to be found in this district, that of Mr. T. A. Bryden near the city of Victoria being a good example of what can be accomplished under proper care and management.

Strawberries, raspberries and other small fruits luxuriate in many parts of this district, and have been planted largely in different localities. The section on the main line of the C. P. R. from Madison to the Coast, and the territory in the southern portion of Vancouver Island are at present the most largely developed and important. An excellent market is available, both locally and in the prairie towns and cities, and is not by any means adequately supplied. There is plenty of suitable land available for further planting. One of the chief hindrances to a rapid extension of the small fruit industry is the difficulty of securing sufficient help, especially during the picking season. This might be remedied to a large extent by adopting the methods in vogue in the States to the south, where cheap summer cottages are provided for families who are brought from the cities and taken care of on the farms during the busy season.

District No. 19 includes the various inland valleys of the Province and contains large areas of land where irrigation is necessary to secure profitable crops. There are also several important sections where the rain and snowfall are quite sufficient to furnish all the moisture required.

A very remarkable movement has been undertaken during recent years in connection with the development of the semi-arid or dry areas. Encouraged by the success which has attended similar enterprises in the States to the south, and the results obtained from the orchards planted by the early settlers where a supply of water was easily available, public attention was drawn to the establishment of irrigation projects in many parts of these valleys. At the present time many thousands of acres have been brought under these systems and are being rapidly changed from comparatively barren areas of little or no value to magnificent orchards of fruit, and farms where large quantities of vegetables and other crops are being profitably produced.

Many of these irrigation systems are being constructed and extended in a most permanent and substantial manner by the more general use of concrete ditches and pipes, with steel flumes where necessary, instead of the ordinary open ditch and wooden flume which, while answering the purpose, allows considerable waste of water and requires frequent repair. It will not be possible to go into detail with regard to this feature of the development of British Columbia fruit growing, and I can only mention as a type of these systems the one under the control Vernon, known as the White Valley Irrigation and Power Company, which is perhaps the most extensive and important of the large number established in the Okanagan Valley, if not in the entire West. In this vicinity are also to be found the celebrated orchards of the Goldstream Estate Co., containing 548 acres of fruit trees in various stages of growth, planted by the Company as a commercial undertaking, with 300 additional acres planted for clients. A number of the orchards on this property have been producing crops of fruit for some years, and very large profits have been derived from them.

There are many important centres throughout these valleys under systems of irrigation, chief of which might be mentioned Kamloops and Walhachin on the main line of the C. P. R., Vernon, Kelowna, Summerland and Penticton in the Okanagan Lake district, and Grand Forks in the Kettle River valley, in addition to numerous localities such as Salmon Arm, Armstrong, Nelson, The Needles, Nakusp and many others where irrigation is not essential. In all these valleys many hundreds of acres have already been planted to the tree fruits. There are still thousands more awaiting the coming of the settler to take advantage of the opportunities which are at present lying dormant in this western Province.

Some criticism has been made at times in regard to the dessert qualities of British Columbia apples. I believe, however, that this Province, in public competition not only with the States to the South but with the older fruit districts of the east, has demonstrated that it can produce fruit which cannot be excelled for size, colour, freedom from blemishes and, in the case of many varieties, for dessert qualities.

The country is new; many problems are unsolved, and in some cases the great opportunities of the West have been manipu-

lated by the unscrupulous land-jobber, but all honor I say to the men who, with strong conviction and great courage, have undertaken the work of making the fruit industry the most important agricultural feature of this Province of wonderful resources. They will be able to profit by the experience of the older Provinces and avoid many of the mistakes made in the earlier days when horticultural knowledge was much more meagre than it is today. They have the success of the States to the south as an incentive to stir them up to good works and there is every indication that in a very few years British Columbia apples will be favourably known in every fruit-consuming country on the Globe.

The proper distribution throughout Canada of the increasing supplies of fruit will necessitate a close study of transportation facilities. In this respect there is room for great improvement. The officials of our larger railway companies are becoming more and more interested in the fruit trade; they realize that it is an important addition to the volume of traffic, but are not yet sufficiently impressed with the claims of the fruitgrower for better equipment, service and despatch. In many cases very unsuitable cars are supplied; unusual delays in transit are frequently experienced; serious losses occur which are very difficult to adjust; rates of carriage are in many cases excessive and absorb too much of the ultimate value of the product. Some relief has been obtained, but much remains to be done before this feature of the Canadian Fruit Industry is put on a satisfactory basis. The great northwest country will be able to consume, at a profit to the producer, all the fruit that can be grown for many years to come, provided it can be landed from the east and from the west in good condition and at reasonable cost.

This conference will render the very best service to the Fruit Industry at large, if ways and means can be devised to secure improvement of these conditions, both with regard to the freight and express service. I take the liberty of suggesting to this conference the advisability of selecting a joint committee of say three men, one from British Columbia, one from Ontario, and one representing the Maritime Provinces, whose duty would be to secure facts and information relative to market conditions, both as to supply and demand throughout the Dominion, and give publicity to such information. This committee would also be able to treat with Rail-

way Companies and other organizations, having regard to the welfare, not only of any particular section, or Province but of the Fruit Industry of Canada as a whole.

It was my privilege to visit one or two important sections of the United States during my trip. The one thing that impressed me most strongly amongst our cousins to the south was the strong emphasis placed on the question of quality by those who were most successful. Every possible method that will secure quality, finish and beauty of appearance in the product, is being sought by many of these men and adopted. The result is apparent in the high prices which are now being obtained for Hood River, Wenatchee and Yakima apples, and in the reputation which many New York State leaders have established in the principal and most discriminating markets of the east.

While in the older fruit sections of the Dominion insect pests and fungous diseases have obtained a strong foothold and have caused great loss and damage, such progress has been made in the discovery of remedies and methods of control that in the majority of cases the alert fruit grower need not fear disaster from these causes. Climatic conditions may on occasion threaten his very existence. They should serve to awaken greater perservance and determination. The disappointments that occur at times should develop a resourcefulness in overcoming difficulties, and promote a strength of character worthy of admiration.

It has been demonstrated over and over again, in every Province of the Dominion, that while there is a very large surplus of indifferent fruit produced and offered to the public, the market never has been, and will not for years to come, be fully supplied with fruit that can be called strictly fancy. Altogether apart from the satisfaction derived from handling a first-class article, permanent pecuniary success depends upon a proper appreciation of this fact.

In closing let me say that if I can leave with the Canadian fruit grower a more thorough realization of the value and importance, not only to himself but to the country at large, of leaving no stone unturned and sparing no effort to secure the very highest quality and establish the very highest standard in every detail of his business, then I may hope that the time and effort spent in making this investigation will result in giving some little impetus to the Fruit Industry of Canada.

Address of Senator W. H. Paulhamus, of Puyallup, Wash.

Before the British Columbia Fruit Growers' Association Convention, Victoria, January 30-31, 1912

Mr. Chairman and Gentlemen:—I am very proud to be introduced to you as a fruit-grower and not as a politician. I think that as a class we fruit-growers take very little interest in politics, for selfish reasons, and as a result of our neglect I believe that there is no industry on the continent that is more overlooked than that of fruit-growing. In my humble opinion, by taking a greater part in the political organizations of the day, we could accomplish a great deal more in the way of results. Now, gentlemen, this is the first time I have been out of the United States, and I can tell you that I was a little timid about making the trip. I have often intended coming over, and in fact have on several occasions made arrangements to do so, but somehow or other something has always come in the way to prevent me, so that this is my first trip, and I will ask you therefore to bear with me in the event of my appearing so much at home as I would like to on finding myself in the company of men who follow the same occupation as I do myself. As I say, I was a little timid about coming here because I expected to find some of you with horns, but I am glad to say that you look just like other people. I had the pleasure yesterday of attending the House of Parliament while in session, and I found the members going to sleep just as we do at home. I heard one member accuse another of playing to the gallery, just as we do over there. Before coming over here I met a friend of mine who asked me where I was going, and when I told him I was going to Victoria, well, don't tell them anything, and when I asked him why I should not tell them anything, he replied, because they are competitors of ours, and if you tell them all we know they will know just as much as we do. (Laughter.) Now, gentlemen, I want to tell you what we know; I want to tell you what we have done, and I want you to tell me what you have done. In the brief time at my disposal I will tell you about a few of the things we have done on the other side and

after that I shall be pleased to listen to an exposition of what has been going on in the province of British Columbia.

For the purpose of illustration I will cite the example of Sebastopol, where they have a very large fruit industry, principally blackberries, which they send to the San Francisco canneries; the canners beat them down as low as possible. They were selling fifteen years ago direct at \$35.00 per ton, the canners shipped them to Seattle and Victoria and sold them at \$2.85 a case f.o.b. If we could get the people of Sebastopol to organize they would control the market; they would get more money for their berries, which means that we also would get more money for our berries because a low quotation anywhere has a tendency to drag down the price all along the line. I undertook to help the growers of Sebastopol and in truth helped them to organize. We are very much interested in your organization, because if you are going to sell your fruit cheaper than we sell ours, we will have to come down to your level, and if we sell ours cheaper than you sell yours, you will have to come down to our level or quit the market. The success of the fruit industry is not confined to Washington, Oregon and Idaho; it extends to British Columbia and all the Canadian fruit-growing provinces, and it depends upon the quality and the price in the aggregate what advantage each of the different localities will have. Many of our markets are wanting more fruit; many of your markets are wanting our fruit; last year we sold a big consignment in Winnipeg, and in that connection I am sorry to say we had to pay an extra two and a half cents on them (laughter). We want to get for our growers everything we can, and I presume that you want to do the same thing. There may be a time when we forget that there are large markets and I invariably find that when we are doing that we are paying attention to the growing of a large number of varieties of fruit instead of to the large growing of special varieties of fruit. I would

just like to suggest that the thing for us to do is to grow here what cannot be grown elsewhere and confine ourselves largely to that. If we find that we can raise raspberries or Jonathan apples or a particular brand of pears better than they can elsewhere, these are the things we should raise.

But the secret of the whole thing—the success of the fruit industry—depends entirely upon organization. We have a little organization in our district, with a very small capital. I think it has \$1,936.00; we have nine hundred members; in January we had 1,299 stockholders holding those 1,936 shares, which means less than two shares per member. A share in our stock costs a dollar and we do not pay any dividends because we do not want the stock to be the aim of membership. We organized for the purpose of getting the best that we could out of the market. We have now \$28,000 of a surplus, and that, too, after paying our growers more per pound than they ever received before. The industry of fruit-growing in the district to which I refer was never so successful. Before we were organized we received sixty to seventy cents per crate for raspberries; we have been organized twelve years, and we now receive \$1.75; I may say also that the output has increased in the same ratio as the returns. We handled three to five thousand crates a year at sixty to seventy cents in the old days, and now we handle over two hundred thousand crates per year in spite of the fact that we have added a dollar to the selling price. (Applause.) Yes, I believe in organization; because it means more money for me; our land used to be worth about \$100.00 per acre, now it is worth at least \$1,000.00.

I expected to come here to address juniors in the fruit industry, but after listening to your report I find that you are twenty-two years of age. I can understand, however, that your country is still new. In twelve years our industry has come into its own and I confidently assert that its growth has been brought about through organization. Before we were organized there were probably 75 growers in the district and their chief products were red raspberries. I have three acres of them myself. We used to pack up our produce each day and take it to the depot; we did not know where to send it, and we did not know where our neighbor was sending it. We were all there like so many sheep waiting for a leader. It would sometimes happen that one grower would get

an order to market his fruit with Smith of Montana. If we observed him labelling it we would all do the same thing. We did not take the trouble to ask Mr. Smith if he wanted our fruit; we simply sent it, and as we were farmers we did not believe in telegrams. Later on we would write and tell Mr. Smith, but as it sometimes took two days to get there the result often was that the berries when placed upon the market did not bring in enough to defray the express rates (laughter). In other places the markets were often left bare by this method of sending all the fruit to one place regardless of whether that market could accommodate it or not. That sort of thing lasted for a long time, and, needless to say, the farmer sustained heavy losses. Then we got together and organized, and now one may distribute every crate of berries that is grown in our valleys so that there is no duplication of shipment, no glutting of markets, and no possibility of loss; we shipped out last year fifty-nine thousand crates of red raspberries; thirty-four thousand crates of blackberries, and we turned into our cannery two hundred and sixty-seven thousand pounds of red raspberries.

We put up in gallon cans seventy carloads of blackberries, and we could have sold many more. In the old days the practice was to fill in the spaces in the cans with water, and it often happened that there was as much water as anything else, but when we found that we could have a better market and more profitable returns by making the majority of the cans fruit, we were not adverse to doing so (laughter). As farmers, naturally, we believed in cheating; that is the truth of the matter, but in the end we found that by following the course we were cheating nobody so much as ourselves. We found, in fact, that by adopting an honest policy we could make a success of our industry.

There is one thing I want to tell you though in connection with this organization scheme, and that is that there is no one of us capable of judging our own fruit any more than I am capable of judging my own children. I know they are the best because they are mine, but as you are all aware, I could never convince you of their pre-eminence. I can tell you how we ran our fruit industry because I am the boss of it. It took me a long time before I was able to say over there, because they do not like being bossed. Now, however, they don't mind a bit, because they know that I do not mean it (laughter). The

truth of the matter is that in the old days many and many a time have I gone through the alleyways and backways in order to have a meeting of the members. They used to accuse me of every crime on the face of the earth, and more than that they used to come pretty near to proving them (laughter). We used to put a carload on the road and then pray for its deliverance at the other end. We now sell our berries properly and get in our returns regularly. Even the fellows at Winnipeg buy our berries. Now, how is that brought about. I can tell you that is brought about by organization.

Last year we had in our valleys of from four to six acres \$461,000 in blackberries and raspberries. That figure may not mean much in the lumber or salmon industries, but it means a thundering lot of berries; and the beauty of it is that we are getting more and more every year. This year our raspberry fields will increase their yield by thirty-three and a third per cent. Of course we have all kinds of obstacles. The railway companies would rather spend \$100 in bringing someone in here than spend \$50 in taking care of a settler who is here already. I do not believe that the railway companies understand that the success of their lines depends upon the farmer's prosperity than upon their own activity in bringing people into the country. If the settlers who are here do not find the conditions agreeable, it is a bad advertisement for the country, and no matter how many settlers the railways continue to bring in it will in the end prove an unproductive investment for them for the advantage of the railway lies in having an export trade from the place it carries settlers to (applause). I do not care for how many people you bring in if you do not look after them once they are here. I am trying to convince the railroads of my country of the importance of this point. I am pointing out to the express companies that they will make more money out of fruit that falls from the trees than they will ever make by merely bringing people into the country.

Suppose, instead of shipping our goods at the highest class rate the railway companies would agree to haul it for us to the canneries at fifty per cent. of the rate it would mean as much for them as for us. As it is we have to take out fruit and ship it in cans clear across the country. I believe we will get the railway companies to give us the fifty per cent. rate for canning purposes. There is another reason, not so often alleged, why we

should do all in our power to encourage the fruit industry. Unlike the lumber and the salmon industries, where the money earned by the workers invariably goes into the pockets of the saloon-keeper, the money earned in fruit-growing goes toward the further development of the country and to the betterment of the homesteads of the farmers, and the improving of the conditions of the children.

Now, a word as to our method of disposing of our fruit at the market. Suppose the market is Seattle; I will appoint a man to look after our stock and place it with the commission houses. I will send about 800 crates in the morning. He will distribute them among the commission houses according to his discretion. We dictate the prices at which the fruit will be sold and we give them 10 per cent. for handling it. Our man will be on hand during the sale, and at his discretion the remainder of the fruit can be cleared out at, say, \$2, regardless of what price was being demanded before. The commission houses have to sell at that price or do without our business. In the old days there were so many sold and the rest was dumped. We send a man to Butte, Montana, and pay him \$100 a month. He distributes our fruit to the different houses and wires me every morning as to the conditions of sale and the prospects for the future. I well remember bringing in a telegram bill at one of our meetings for \$122. The farmers were very much surprised and not a little indignant at the spending of so much money, but now, although the bills are much higher, they never say a word. When we find one market is overstocked, we ship it elsewhere. We do not glut our own markets. We try to send ten crates less than the market can handle, rather than ten crates more, and in that way we often succeed in raising the price. In order to better understand the wants of the consumers of fruit, I took a trip round several of the leading cities on the continent that we supplied. I started at Guelph and visited every city on the North Pacific. In the city of St. Paul I took in every grocery house. I told them that I would lay them down berries at \$2 to be sold at ten cents a cup. I had drawn up a contract and I got every single grocery store. As a result of that movement our average net returns were \$1.70. The greatest trouble is to find out what the other fellow is doing. We started out just as you are doing, and I feel sure that you will meet with success much more quickly than we did, because you have the benefit of our experience, and in addition

to that you have the Department of Agriculture and the Government behind you, and in that connection I would like to say a word about your energetic secretary, Mr. Winslow. I will tell you a little story about him. One day I was very busy inspecting berries when he came up to me and introduced himself. I said I was glad to see him, but I must say that I never met a fellow in my life who kept me more busy than he did. He went all over our plant with me, and if there is a question that he did not ask me, I would like to know of it. Now, that is exactly our policy—to find out what the other fellow is doing. We have a membership of 900, each one of them delivering berries into the association every day. We have five officials at the receiving house. The grower does not know where his fruit is going, but he does not care. He gets his receipt showing how much he deposited. We have four different grades—A. H. M. and D. A stands for the cannery, B for that which must be consumed within twenty-four hours, M for that which can be shipped a thousand miles, and D for that which can be shipped anywhere in the world. They are regulated by their degree of ripeness and the carefulness with which they are packed. Inspectors open the top, and as they are all alike all the way through, they can be graded at a glance. I make the distribution of the berries. With conditions of that kind it is no trouble at all, because you know what you have to sell. We have orders now for forty carloads of raspberries for 1912; 45 carloads for 1913, and 50 carloads for 1913—sold at home at five cents more per crate than ever received before. The only reason that it is done is that we are organized. In the Empress Hotel I was interested in the bellboys; they fell in line. I looked at one little fellow and said, "You are all right; you are organized." You cannot all be boss. You may make a mistake in selecting a boss; if you do, fire him at once, but do not stand in the corner growling. You will make mistakes; you all make mistakes, but be loyal to your organization, and stand at its back. If you hear a member talking against it, tell him to bring it up at the annual meeting. We farmers are the hardest fellows to satisfy in the world. If there happens to be one of us with a little more than the other, it puts him out entirely. One man asked me if I had an automobile; I replied, that if I had an automobile our association would be busted. I do not believe there is any class of people in the world

afflicted with jealousies so much as the fruit-growers are. What I want to impress upon you is that we are business men, engaged in a business that requires the closest attention, and that is one of the chief reasons why organization is so essential to its success, and I also believe that if we adopt the methods of business men and organize, we will make it the success we desire to. When we started our cannery we found it very difficult to handle. We first of all started in to buy the cans. I went to the bank and said we were willing to furnish the fruit as security for the money loaned. We got along fairly well, our own members taking their money to the bank and getting four per cent. interest on it; at the same time as we, as an organization, were borrowing money from the bank and paying seven per cent. That proposition did not look good to me, so we called a meeting and told the members that we would pay them eight per cent. if they would furnish the money for the cannery. One old gentleman said: "Suppose we all want our money out at the same time?" I replied by showing him a bunch of letters from the various banks offering to lend us from ten to forty thousand dollars, in the event of us not being able to raise the money ourselves. That, of course, was a sufficient answer and we got all the money we required, and today we are running our association free from debt of any kind whatsoever. This last year our growers advanced us \$125,000. Now here we are, a lot of farmers carrying on our own business, and instead of taking our money to the bank and getting four per cent. interest, we put it into the organization and get double that.

It simply amounts to this:—that we are doing away with the middle man and absorbing unto ourselves all the profits of the business. If we make the farmer prosperous, we will also make the cities prosperous, because it is a well-known fact that the prosperity of the towns and cities of any country depends almost exclusively upon the prosperous condition of the farmers of that country. In doing these things we will have the assistance of the people of the cities because they also realize that their success depends upon our success. As an indication of how prosperous our particular fruit-growing community by means of organization, I may say that in addition to being enabled to furnish all the canned fruit that may be wanted, we have already been requisitioned to make prices for this year. Now, I am not making prices,

because I do not know yet how high we may go. Last year we had berries as high as \$3.50; I think that now we might be safe at putting them at \$4.25. In conclusion, gentlemen, let me say that there is no line of business on earth that offers more opportunity as an organized business than that of fruit-growing. It is the least developed in the world and is yet perhaps the most capable of development. J. J. Hill is constantly talking about raising more wheat. Now, the truth of the matter is, that the great pack of wheat does not mean as much for the railway company as the fruit-growing. The gross returns per acre for wheat is \$50.00; whereas for every single acre we have in berries means \$100.00. The railways do not understand what the fruit trade is to them; this fruit industry means more to them by fifty times than the wheat business, and when they waken up to this fact they are going to help us to get along. This present year is the first in which the railway companies have really awakened to the situation. We want to expand our cannery, and the railway company has some land on our side; we asked them for it and they said, "Sure; have it." Every year until now they have refused us that privilege, and I take that as an index of their changed attitude in regard to the importance of the fruit industry. Now, such an organization as I think I have pointed out, requires very little capital and in that connection I would like to say that more people have gone on the rocks because of too much money than not enough. No member of our association can hold more than fifteen shares, represented in value by fifteen dollars; we want every fellow to come in; our surpluses are distributed according to the amount of stock delivered, and not according to the amount of shares which each member may hold. Every member has one vote and no more than one. Our association now is proceeding on the lines of a first-class business simply because we have adopted business methods. The people of this country can do the same. I think your soil and climate conditions are similar to ours, but I would again emphasize the importance of specializing in the types of fruit for which your climate and soil are specially and peculiarly adapted.

CANDID.

Caller: "Boss in?"

Office boy: "No."

Caller: "Never mind, he's on the 'phone."

Office boy: "No he ain't, he's on a spree."

SOIL AND DYNAMITE.

The question of using dynamite for the purpose of making available plant food, in the interests of agriculture, is one which is receiving considerable attention and is worthy of more than passing notice.

Leading agricultural authorities everywhere are advocating deep tillage both as a means of increasing crops and as protection against disastrous dry spells. There seems to be no difference of opinion as to the advantages of deep tillage, but there is in regard to the method of doing the work. What might be called the natural method is the planting of crops such as alfalfa, whose large and powerful tap roots will penetrate a rather compact subsoil to a depth of six feet or more and in a few years render it more or less open and give it a sufficient content of humus to materially increase its fertility and water-holding capacity.

A more rapid method of deep tillage is with the subsoil plough which breaks up the soil to a depth of 15 to 20 inches. This, however, is rather expensive and very hard on men and horses.

Within recent years a third method of subsoiling has been the subject of extensive experiments, namely, with dynamite. The results of these experiments, when conducted under proper conditions, have been quite remarkable. Cotton yields have been doubled, tripled and quadrupled by subsoiling with dynamite. Corn has responded splendidly to this treatment. Cereals, hay, fruit trees, tomatoes, beans, watermelons and various other crops have all shown substantially increased yields when the subsoiling has been done in dry weather, preceding the rainy season. In the North the best time for subsoiling has proven to be from May to November for showing results the next year, and in the South from October to February 1st.

The publicity given to these astonishing results which point to a revolution in farming methods, has naturally created much inquiry in the minds of the farmers as to the cost of subsoiling and the length of time before subsoiled land will have to be again subsoiled in order to keep it open. This question is obviously difficult to answer, because of the lack of long time results, as, with the exception of a few pioneer users of dynamite, most of the remarkable results noted have occurred within the last year or two. Fortunately, however, there were enough of the pioneer users to prove that the effect of subsoiling

lasts many years. The cost averages about \$15.00 an acre, including dynamite, caps, fuse and the labor of making the holes and doing the blasting. In most cases the cost is recovered within the year, out of the increased yield, but in other cases where the increased yield would not be worth more than \$15.00 an acre, it is important to know how long this increased production is going to keep up so as to justify the expense.

Let us first consider the matter from a theoretical point of view. The reason why deep tillage or subsoil plowing is desirable is that all the soil below the bottom of the ordinary plow cut, in other words everything below six to eight inches, is still in its primeval condition. It has never been disturbed. Chemical analyses of soils down to a depth of twenty feet show that on the average acre there are tons of plant foods which become available only when roots can penetrate to them, or when ascending moisture brings them up to the roots that cannot get down. Alfalfa and other deep rooted plants are called "soil makers" because they penetrate this compact soil, introduce humus and provide a passage-way for the descent and ascent of water which carries with it the soluble, fertilizing elements, but many subsoils are so hard that it is practically impossible for any one plant to penetrate them. Even when this is possible there is no use in putting such a burden on the plant, because whatever vitality is expended in making its own home beneath the surface, is subtracted from the vitality of the plant above the surface. In other words, the plant that has to fight for its life beneath the soil, has little energy left for fruition.

If we make root growth easy and quick by breaking up the subsoil, then we make the fertilizing elements of the subsoil immediately available and save the energy of the plant for fruition. We also create in the subsoil a porous condition favorable to the storage of water at a depth that will not keep the soil cold, and yet near enough to the roots to feed them through capillary action. Subsoiling also introduces air into the soil, and it is just as necessary for the roots of a plant to have air as it is for a human being to have air.

Now it is obvious that the passage of air and moisture through the soil, the growth of roots and the resulting deposit of humus, all tend to keep the soil open, hence if it is once thoroughly shattered with dynamite to a depth of five or six feet and the principles of crop rotation are followed thereafter, it is safe to say that that subsoil will never again get back

into its primeval compact condition. Whether or not it remains as open as immediately after blasting, depends on the continuity of cropping and the proper rotation of the crops.

The effect of subsoiling virtually is to change a farm from a six-inch layer of top soil to a six-foot layer. The only element of fertility lacking in the lower five and a half feet is humus and that will be found in the subsoil in ample quantity after the first year's cultivation. The significance of this conclusion must be appreciated by any careful agriculturist, because it means a tremendous increase in available fertility and a practical means of insurance against drouths. It does not constitute a substitute for ordinary plowing. Cultivation of the top soil is always necessary whether the subsoil is broken or not, in order to prevent the growth of weeds, loss of moisture from evaporation and the formation of a waterproof crust.

But one obstacle seems to remain to the general adoption of dynamite for subsoiling, and that is the fear that some farmers entertain about using dynamite. Dynamite has obviously the power to injure—so has gasoline, or a shotgun, or a high spirited horse, but all these utilities are handled regularly by thousands of people without injury, and the same is true of dynamite. There are thousands of farmers throughout the country using dynamite without injury. We occasionally hear of a farmer being hurt or in rare instances killed by the use of dynamite, but the records show that out of approximately 500,000 regular users of dynamite, throughout the country, including miners, quarrymen, contractors and farmers, there was a casualty list in 1910 of less than one-eighth of one per cent. This low accident record is due to the careful following of instructions put out by all manufacturers of dynamite.

It is simply necessary to remember that dynamite is a powerful explosive and handle it accordingly, but there is no reason why any man of common sense cannot use dynamite for a lifetime without injury. Dynamite is so difficult to explode that in practice it is necessary to discharge it by the explosion of a fulminate cap. Because of its insensitiveness to shock, dynamite will not explode if dropped on the ground, as many people erroneously believe. The ordinary dynamite cartridge is eight inches long, one and a quarter inches in diameter and consists of a paper shell enclosing the dynamite, which looks like brown sugar.

MY BRIEF HISTORY.

It was three minutes to twelve on New Year's Eve. Mr. Jorkins was seated comfortably in an arm-chair in front of a blazing fire. Mr. Jorkins was a bachelor, with a bachelor's tastes and a bachelor's resolutions. By his side was a glass of whisky.

The clanging joy-bells announced to Mr. Jorkins that the New Year was beginning. He hurriedly picked up the glass of whisky, drank it, and cried:

"That is my last! Here's to New Year, and here's to my New Year resolutions, 'Not to touch another drop'!"

Thus was I born!

That toast to the New Year, that last drink, saw me ushered into a cold and thirsty world.

With a sigh of regret Mr. Jorkins, who fathered me, rose from his chair and went to bed. For the next eight hours I was forgotten.

At breakfast on January 1st my father said to his landlady:

"Mrs. Thompson, please stop my whisky account. I have turned over a new leaf and I am joining the great band of ginger-ale and kola experts."

The landlady indignantly sniffed through a nose that was almost as red as the blouse she was wearing.

Mr. Jorkins looked at his watch, hurriedly put on his hat and coat, and ran all the way to the station. During the morning at the office he hadn't much time to think of me. When lunch time came round, however, his pet pal Smithson said:

"Coming for a refresher, Jorkins?"

"Don't mind if——" began my father. Then his glad-eye-look suddenly disappeared. "Sorry," he went on, "but as a matter of fact I have resolved to chuck up whisky. New Year, you know!"

Smithson looked at him severely.

"You'll turn vegetarian next, Jorkins," he said.

Jorkins' lunch was a lonely one. He felt that he couldn't trust himself with his pals, for fear of killing me. During the afternoon he was grumpy. Twice he distinctly reviled the office boy for no reason whatever. At dinner that night he found fault with the way the meat was cooked, and grumbled because the pastry wasn't right.

He spent the evening reading a book called "The Perils of Alcohol!" by an ex-brewer. This gave him some satisfaction,

though once, just before he went to bed, I felt that my last hour had come. I had a regular fight for my life, in fact. It was only because the "pubs." were closed that I escaped!

Next morning I felt stronger than ever. I was now over thirty hours old, and my father seemed determined that his child should live his allotted span. He gave a quite decided "No" to Smithson's invitation at lunch time. During the meal he had a bottle of ginger-ale, but I regret to state that he only had a few sips when he called for his bill and hurriedly left.

I trembled for my fate!

However, my father, to the surprise of the porter, came into the office half an hour early instead of late, and settled down to work with a determined-to-do-or-die air.

On his way home that night my father bought a pound of apples and ate them as fast as he could. I noticed in the paper he was reading a little paragraph which said:

"Professor Teetee, the well-known President of the Blue-Ribbon League, states that apples are anti-alcoholic. A few apples eaten now and then will cure the most confirmed drunkard."

That night my father ate another pound of apples and complained of violent pains in his little Mary. However, I felt quite healthy and strong next morning. I noticed with joy that he ate a few more apples during his work.

Twelve o'clock came, and a horrible groan from my father gave me quite a shock.

"What's the matter?" said Smithson.

"Apples," said my father shortly.

"What you want is a nip of whisky. Finest cure for pain below the belt in the world. Have a drop now?" and my murderer pulled out a small pocket flask.

At that precise moment my parent was doubled up with agony. He reached forward for the flask.

I died at 12.2 on January 3rd, aged sixty hours, two minutes.

(Signed) —A New Year's Resolution.

NASTY.

SHE: "Is it true that you always sleep with your gloves on?"

HE: "Yes; it keeps my hands so nice and soft."

SHE: "Indeed! And do you always sleep with your hat on?"



GROUP OF DELEGATES TO THIRD DOMINION FRUIT CONFERENCE, OTTAWA, ONT., FEBRUARY 14-15-16, 1912.

Editorial

RURAL PROGRESS.

It is a matter for congratulation that steady progress is being made in the development of sanitary conveniences in rural districts where gravitation water supplies are not available and the old-fashioned is rapidly being replaced by chemical closets and the septic tank system.

A noted physician recently said: "Show me a way of abolishing the cesspool closet in country districts and I will show you a way of avoiding ninety per cent. of the sickness and disease in those same communities."

According to statistics compiled by the health department of several countries, more than ninety-five per cent. of contagious diseases are contracted by means of outdoor pit closets. A pit closet, however well constructed, remains a cesspool. Gradually seeping through the ground, deleterious matter eventually finds its way to the well from which the family draws its water supply. Distance of the privy-pit from the well does not save the water of the latter from contamination, and the inevitable result is that the average country family is drinking water as deadly to health as if specially prepared to spread the most dangerous diseases. This water may be consumed for some time with apparent immunity, but let a member of the family be in a run-down condition and the bacteria with which the well simply teems, will find an easy victim.

Apart from the seepage of obnoxious matter into the water supply, it is well known that the exhalations from privy-pit closets are highly injurious, and many cases of infection occur through breathing contaminated air in the neighborhood of cesspools.

It is in summer, however, that the outdoor closet most successfully operates in spreading broadcast the seeds of disease and death, and its greatest ally is—the common housefly. From the very nature of its contents, a cesspool must be constantly swarming with deadly organisms and the housefly's mission in life seems to be to convey these organisms to

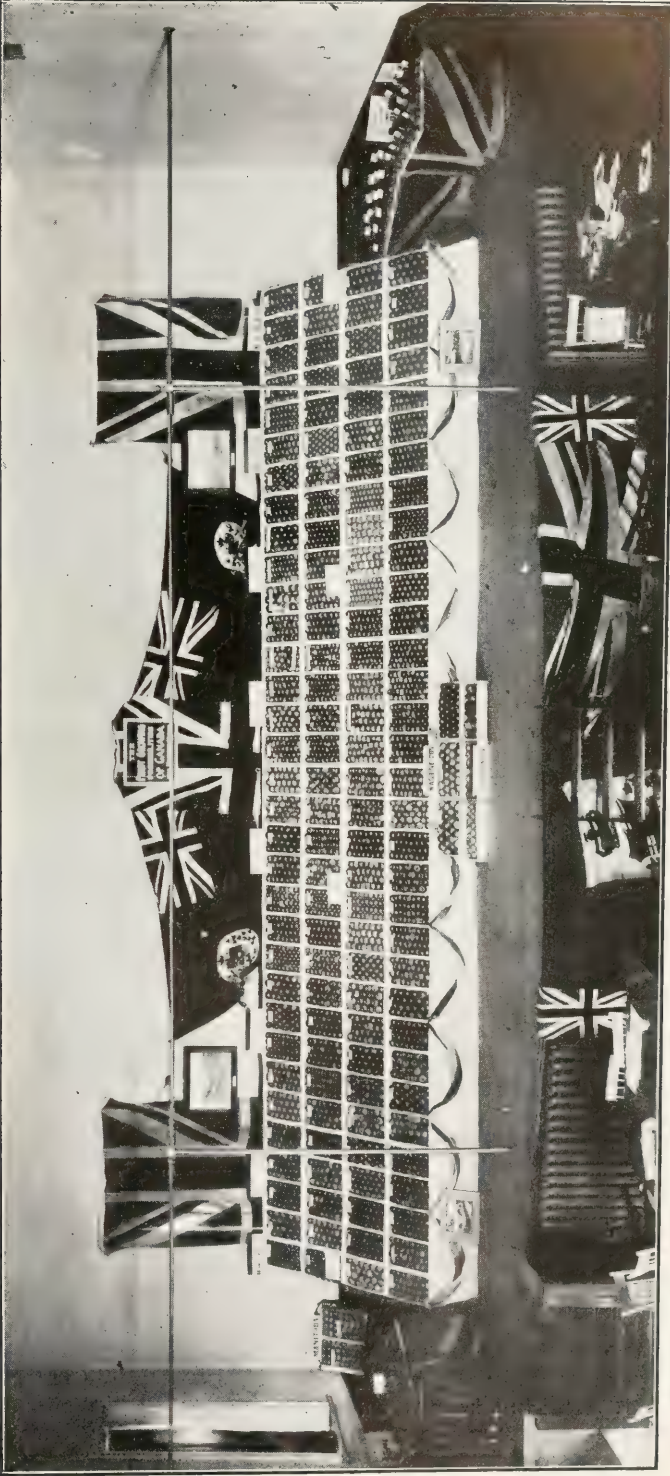
where they will best accomplish their fatal work, i.e., to human beings. A fly that has merely alighted for a moment in a cesspool will deposit wherever it walks, some thirty thousand bacteria at each step. The possibilities of a fly carrying such a freight, walking upon, say, a dining-room table, are ghastly to contemplate. When we consider that not one fly but hundreds of them, are constantly engaged in this awful carrying traffic in many homes, it is not difficult to imagine the result. "Swat the fly" is neither a craze nor a fad. It is the cry of those who are fully awake to the fatal agency of the housefly as a propagator of disease. If the fly were a clean insect, there would be no need of its extermination, but deprive a fly of dirt and you deprive it of life.

YEAR BOOK FOR BRITISH COLUMBIA.

The "Year Book of British Columbia," by Mr. R. E. Gosnell, has reached our office, and it is certainly a work of merit worthy of the distinguished author. The book contains about 360 pages and is handsomely illustrated.

In addition to the fullest possible statistical, official, and commercial information, the "Year Book" includes a useful historical survey of British Columbia, and a list of "Dates in Our History," from "1509, Francisco Pizarro reaches Darien," to a recent visit of Mr. McBride, the Premier, to England. Over and above the fullest supply of exact information regarding material things, the picturesque and human element has been given proper attention, and the book enables one really to know something of the Province and its life, apart from its facts and figures.

If you want facts about British Columbia, get a copy.



FRUIT EXHIBIT, THIRD DOMINION FRUIT CONFERENCE, OTTAWA, ONT., FEBRUARY 14-15-16, 1912.

Hatching

BY MR. C. E. BROWN

It is high time preparations should be made for the season's hatching and brooding. This is of the greatest importance. All the equipment necessary for use should be gone over thoroughly, and necessary repairs made; coops, brooders, incubators, should be thoroughly cleaned and made ready. New equipment, food and repairs should be ordered in ample time for early delivery. This is especially true in the case of ordering from incubator companies. Very often I have had to wait two months for goods. The old adage that procrastination is the thief of time applies to poultry husbandry as well as other lines of business; so let us get busy.

THE INCUBATOR CELLAR.

Those who run their incubators in cellars, especially a house cellar, know that there roots and vegetables are usually found, and along towards spring some of them become decayed, and the air of the cellar is not pure and fresh as it should be. Anything of this kind should be removed and the floor and walls swept and cleaned. Incubator eggs are just as susceptible to foul odors or impure air as anything else, and we should not expect good hatches of strong, thrifty chickens when the machine is run under anything but the very best conditions.

THE INCUBATOR.

There is always more or less danger from incubators that have been previously used from the fact that disease germs which may have existed the year before are still present. Unless the machine is disinfected these germs may be passed on to the little chicks when hatched. We should thoroughly wash or scrub the interior of the machine with some reliable disinfectant. A 20 per cent solution of zenolium is splendid. The movable parts of the machine should be taken out and washed and aired in the sunshine for an hour or two. The lamp flues should be cleaned out. The burner will require cleaning, the gauze and interior parts may be clogged. The burner would be the better of a good boiling in soap suds or washing powder. And last,

but not least, clean the glass in the door of the machine. Sometimes it may be necessary to take it out completely and clean both sides of it. It is provoking when the glass becomes soiled, especially when it is important to watch the thermometer.

THE BROODER.

The brooders need to be examined, cleaned and repaired. Broken panes should be replaced, hinges and fastenings tightened. The out-door brooders may need repainting and the roof repaired. As in the case of incubators, brooders need to be kept scrupulously clean. The floors and walls must be cleaned and disinfected. The lamp and lamp-box should be carefully examined and all flues or tubes cleaned and repaired. Little precautions such as these should be taken now, so that everything will be ready the moment the chicks arrive. This extra work will be well repaid many times before the season is over.

THE OIL.

It is never safe to use a low grade of oil. Many losses from fire or lamp explosions are directly traceable to the fact that poor oil was used. Cheap oil is so apt to smoke and produce soot, especially when it is necessary in cold weather to turn the flame high. Even in warm weather it is especially dangerous in brooders. Towards the middle of the day when the excessive heat causes the flame to rise, cheap oil is exceptionally dangerous. The difference between the two grades of oil as a rule is so small that no poultryman can afford to do without the very best.

NESTS FOR THE SITTING HENS.

This is a good time of the year to make a good supply of nest boxes for the setting hens. Time is not quite so valuable as it will be later on. The old nests should be cleaned and repaired. When making new nests see to it that they are not made too deep, as fresh air is very necessary for the healthy growth of the embryo chick. Hens set in deep boxes or barrels never hatch strong,



HAID INDIAN WOMAN SMOKING SALMON, BULKLEY VALLEY, B. C.

thrifty chicks. Nest boxes need not have bottoms to them so long as they are to be placed on the ground or floor. They should be from 4 to 6 inches deep and from 12 to 14 inches square. Have some dry sand, earth or fine ashes ready to put in the nests, as this helps greatly in controlling vermin. Another plan for nests is to construct them out of cracker boxes or any boxes which can be procured at the grocers. Arrange them so that the fronts will be about six inches high, and when a number of hens are set together a lid should be provided to shut each hen in, after they have been off for feed and water. Be careful to have the room or coop which is to be used for the sitting hens well cleaned out and disinfected to be sure all vermin is destroyed. Lousy hens never do their best and occasionally numerous valuable eggs are destroyed. Several hens should be set at once, so as to have large numbers of uniform chicks to select from in the fall; for this purpose it is necessary to construct nests in groups of a dozen or so. This grouping of nests saves considerable lumber.

THE RETORT.

"You'll have to do one of three things," described the very portly conductor.

The ticketless passenger looked up insolently and said, "Well?"

"Show your ticket, pay your fare, or get off" answered the very portly conductor.

The insolent passenger leaned out of the window, "And you, too, my friend," he said seriously, "will have to do one of three things."

"Well?" queried the portly conductor.

"Walk more," retorted the passenger, "eat less or burst."

And by the time the fat conductor had recovered, the train had left the depot.

Doting Mother: "And whom do you love best, Daddy or Mammy?"

Johnny: "Daddy."

Doting Mother: "Oh, but Johnny, mummy has always been so kind to you."

Johnny: "That's all right; but we men must stick together."

FOR A FINISH.

Quiet-Spoken Customer: "Do you keep everything for the piano?"

Salesman: "Yes sir, we do sir."

Q. S. C.: "Give me an axe."

Our Ottawa Letter

FROM OUR OWN REPRESENTATIVE AT THE NATIONAL CAPITAL

HIS Royal Highness the Duke of Connaught makes his tour of the Dominion at the height of the exhibition season. It is to be hoped the fruit growers will be able to show him a fair sample of what Canada can do in the way of apples, pears, peaches and so forth. It will be remembered that he inspected the fruit display at the Fruit Growers' Conference here and expressed his deep interest in the fruit growing industries of the country.

Ottawa having secured the Dominion Exhibition for the present year, carrying the federal grant of \$50,000, for the Central Canada Exhibition, a large sum of money is to be expended by the latter in permanent buildings, and there will be increased accommodation and facilities available for the display of all the leading exhibits, including, of course, fruits of all kinds and fruit products. Unusually large entries may be looked for from the fruit districts of the Maritime Provinces, Ontario, Quebec and British Columbia. The show of Canadian-grown fruits for this occasion, should, if average growing conditions prevail this year, be unusually extensive, varied and attractive. The Exhibition is to open on September 5th and close on September 16th, an extension doubling the usual period allotted to the annual Central Canada Show at Ottawa. Sixty per cent. will be added to last year's prize list of the Ottawa meeting. Some idea of what this means, as regards fruit awards, may be gathered from the awards of 1911. The list is headed with a special prize of a gold medal to the exhibitor scoring the greatest number of points on fruit, namely, apples, plums, grapes and melons, and then follow money awards for 31 separate classes of apples, including best selections grown in the Ottawa Valley, 10 varieties correctly named; same, 5 varieties; for best collection 10 varieties fall apples correctly named; for best collection 10 varieties winter apples; for separate collections of the Alexander apple, Red Astrachan, Milwaukee, Blue Pearmain, Brockville, Beauty, Baldwin, Baxter, Ben Davis, Duchess of Oldenburg, Early Strawberry, Fameuse, Langford Beauty, McIntosh Red, Peach of

Montreal, Switzer, Golden Russet, Scott's Winter, St. Lawrence, Northwestern Greening, Wealthy, Pewaukee, Wolf River, Tolman's Sweet, Seedlings Fall, Seedlings Winter, and best crab, two classes; for commercial packages, the best box of MacIntosh Red, the best box of Wealthy, the best box of Wolf River. In pears and plums the list includes nine separate classes; grapes, melons, etc., 23 classes. Sixty per cent. added to the above lists of awards may include something well worth the attention of exhibitors from faraway fruit-growing districts.

Fears were recently expressed in some quarters that a succession of severe contrasts in weather conditions from mild to sharp cold and back again from heavy frosts to sunny hours and a rising thermometer might have had a bad effect on the fruit trees in different sections of the country, but reports received here from most parts of the Dominion are, as a rule, reassuring on this point. A large wholesaler just back from a trip through the Niagara peninsula says there is very little sign or talk of winter damage anywhere in that direction and everything looks promising for a good fair average fruit season, so far as present prospects permit a judgment to be arrived at.

Winter stocks of apples in the barrel in Ottawa and Central and Eastern Canada generally, this side of the Maritime Provinces, are going fast, and in less than a month most of what is left of the Spy and other good keeping sorts will have been disposed of. No. 1 Spy is selling here for \$6.00 a barrel, and still in demand. The average price realized throughout the winter for No. 2 figures out between four dollars and a half and five dollars; No. 1 fruit of other favorite varieties realize about the same; there is not much left on that grade, but quite a lot of No. 2 is at present on hand. The damage to the orange crop in California last season helped the Canadian apple trade all through the winter. A good deal of the best grades of California navel oranges were touched by the frost, and bitter, and the sale fell off and grades of fruit that regularly sold last year at 45 and even 50 cents a dozen were to be

had everywhere at 35 cents and in some instances at 30 cents; and even at the reduced rates the sales were not as lively as they were the same time in 1911.

We are getting remarkably fine shipments of strawberries just now from Florida. At C. Moreland's store, Rideau street, today, I saw some of the finest fruit of the kind that probably ever came north of the line before. It was brought all the way from the South to Ottawa in ice boxes and came to hand in the most tempting condition—perfect in form, color, fragrance and taste. Mr. Moreland told me he had been receiving consignments of strawberries from the South since Christmas time. The first consignments sold at \$1.00 to \$1.25 the small ordinary retail

Indies delegates include B. H. Wolcott, collector of customs, Trinidad; Sir T. C. Raynor, attorney-general, British Guiana; Dr. W. K. Chandler, master in chancery, Barbadoes; E. J. Cameron, C.M.G., administrator, St. Lucia; F. W. Griffith, superintendent of customs, St. Vincent; W. D. Auchinleck, attorney-general, Antigua; T. L. Rosburgh, C.M.G., administrator, St. Kitts; W. H. Porter, treasurer, Dominica; Lt.-Col. W. B. Davidson-Houston, commissioner, Montserrat. Besides these official delegates, the following representatives of commercial organizations are expected to be present, namely: Adam, Smith, Trinidad; G. Wyatt, British Guiana; F. A. C. Colleymore, Barbadoes; J. E. Hazel, St. Vincent;



NATIVE INDIAN SALMON TRAP, BULKLEY RIVER, B. C.

quart box around Christmas week, and the price is now 65 cents a box, with an increasing demand on the one hand and increasing supplies on the other. Extremely fine consignments of grape fruit and bananas are being received at Ottawa just now and having a ready sale at average prices.

The reciprocity negotiations with the British West Indian islands commence here on the 27th inst. The Canadian representatives will be Hon. G. E. Foster, Hon. W. T. White and Hon. J. D. Reid. The West

J. J. Camacho, Antigua; S. L. Horsford, St. Kitts; J. C. McIntyre, Dominica, and F. Driver, Montserrat. Jamaica will not be officially represented. The island is doing a very large trade with the United States, and the local men fear it would be jeopardized if they went in for reciprocity with Canada at the present time. If a reciprocity agreement between the other islands and Canada should be established and results prove as satisfactory as generally anticipated, there is very little doubt that Jamaica would eventually

come in with the rest. Fruits and sugar are the principal exports from the British West Indies, and coffee comes next in the list of values. The fruits exported comprise bananas, coconuts, grape fruit, lemons, limes, mangoes, oranges, pineapples and tangerines. In Jamaica alone the total value of the returns from orchards and banana plantations for the past fiscal year was a little over six million dollars. For the first half of the present year the export of bananas exceeded that of the corresponding period of last year by nearly two million stems. The United States practically monopolizes the trade, taking, last year, for example, 13,314,493 stems valued at over five million dollars out of a total of 14,095,191 stems, against only 20,578 taken by Canada and 759,874 by Great Britain.

At Bristol, Eng., the following wholesale prices for apples were quoted at the close of last month: Nova Scotia—Baldwins, No. 1, 16s., No. 2, 14s.; Ben Davis, No. 1, 15s.; No. 2, 13s.; Greenings, No. 1, 16s.; No. 2, 14s.; Northern Spys, No. 1, 16s., No. 2, 14s.; Golden Russets, No. 1, 19s., No. 2, 17s.

A valuable report on the trade requirements, imports, and so forth, of the Argentine republic has been made to the Trade and Commerce Department of Canada by Mr. H. R. Pousette, Canadian Trade Commissioner at Buenos Aires. With respect to fruit, Mr. Pousette, referring to apples, says no statistics showing the quantities imported are available, all classes of imported fruit being lumped together under the heading of fresh fruit, etc. One can only judge from personal observation and the statements of dealers. These lead to the belief that the trade in imported fruit is already a fairly good one. At present apples are imported from Tasmania, New Zealand, Spain, Italy, the United States, and, to a limited extent, from Canada. Regular consignments were at the time Mr. Pousette was writing, arriving from New York. Some of these shipments were packed in the State of New York, but not a few had traveled all the way from California and Washington. "If California apples," Mr. Pousette remarks, "can be profitably exported to Argentina, one cannot but believe they can be still more profitably exported from Ontario or Nova Scotia." As a matter of fact, there can be no question as to the profit, as a walk through the local market will speedily convince anyone as to that phase of the subject. The apples displayed for sale range

from \$1.00 to \$5.00, paper, per dozen, or 43 cents to \$2.15, Canadian currency. The former are usually small and poor looking, the latter large and bright in appearance. An average apple will sell by the barrel at from \$15 to \$20 gold. The freight from New York to Buenos Aires in the freezer is 62½ cents per foot, or about \$3.75 a barrel; if stowed between decks it works out at \$2.25 per barrel. So far as Mr. Pousette has been able to learn, only one steamship line between New York and Buenos Aires carries cold storage; and the space for October, November and December appears to be booked for the next two or three years. Consignments stowed between decks have been delivered in good condition, but this practice is not recommended unless the fruit is shipped in cold weather, and, furthermore, that the apples be of exceptionally good keeping quality and very carefully packed. But every effort should be made to secure space in the freezer. If the requisite facilities are not procurable on the New York lines the shipments could be sent via Liverpool or Southampton, and for probably very little extra expense over the former route, but transshipment of cold storage fruit should be avoided if at all possible. While it is difficult, as Mr. Pousette explains, to judge closely as to the capacity of the Argentine market, he is clear that it should easily absorb 40,000 barrels per annum. So far as the Dominion of Canada is concerned, much would depend on the shippers. If they pursue what the Commissioner terms an absolutely straight course in their dealings with importers at Buenos Aires, shipping only high-class fruit and of uniform quality throughout each barrel, or case, the trade must expand. There seems to be a feeling in Buenos Aires that better treatment may be accorded by Canadian shippers than by those in the United States—it remains for the former to justify this opinion by honest, straightforward dealing.

Hon. Philippe Roy, Commissioner General for Canada at Paris, reports to the Department of Trade and Commerce that Canadian exporters may look with confidence for increased trade between Canada and France. There is a growing tendency in France to look for Canadian enterprises, and serious projects are on foot to take part in Canadian industrial development. Numerous persons in the trading circles of Paris desire to secure the representation in France of Canada's most important exporting concerns in such lines as Canadian lumber, wood pulp

and chemical pulp, Canadian cereals, especially wheat and barley, and hops. The cattle trade, particularly of stock to fatten, is also attracting considerable attention. If all these, then Canadian fruit should soon be figuring among the good things from Canada that the French capital and other great French cities will be wanting.

United States consular reports contain the following information respecting the apple trade with Germany: The total importation of fresh apples into Germany amounted to 122,048.8 tons in 1910, and 306,761.5 tons in 1911; Canada, 152.1 tons and

since the beginning of the season. The apples coming from the eastern part of the United States landed in the beginning in good condition and sold at very satisfactory prices. This, however, lasted only for a few weeks, since which all arrivals have landed in more or less bad condition; considering this, the prices realized have been fairly good, owing to a very strong demand, but, nevertheless, losses were sustained all around, and sometimes very severe losses. We are under the impression that nobody can be blamed for the poor arrivals, but that unfavorable weather conditions during the time of growing and



INDIAN CURED SALMON, BULKLEY VALLEY, B. C.

these imports, 23,561.1 tons were subject to duty in 1910, and 37,525.7 tons in 1911. Of these dutiable imports the United States supplied 5,120.7 tons in 1910 and 11,054.8 tons in 1911; Sanada, 152.1 tons and 6,837.8 tons in the same years; and Australia 1,449.6 tons and 1,578.6 tons respectively. (There is no duty on fresh apples imported into Germany between September 1st and November 30th, during which time they do not compete with the German fruit.)

In regard to this business, the following observations were received from one of the largest and best-known importing firms in Hamburg, the distributing centre for the part of Europe in which it is situated. Owing to the very short fruit crop on the European continent, the imports of American and Canadian apples have been comparatively large

harvesting are responsible for the poor keeping quality this season. Shipments have again started in a small way out of the cold-storage warehouses; we believe they will land in good condition and fetch satisfactory prices. Apples from the western states are, without exception, being shipped in boxes and have arrived in fairly large quantities and sold until the beginning of December at fairly good prices and recently at very satisfactory prices. We are of the opinion that until April good prices will be obtainable for this kind of fruit. Regarding packing, we wish to say that apples from the eastern states packed and shipped in barrels were very often not honestly and carefully graded. It is very essential, in order to maintain the trade, that the packers endeavor to improve the packing. The shippers from the west-

ern states, who pack all their fruit in boxes, have always given very honest and careful packing, and consequently are gaining fast in favor with the dealers and public at large.

Owing to the very large crop in Nova Scotia, about 150,000 barrels have been shipped from that province of Canada to Hamburg, and considering the quality, have been sold at satisfactory prices.

SONG OF "THE ROAD."

By Felix Penne.

Hurrah! for "the road,"

And the men who have made it—

A fig for the dude with his lily white hand,

Hurrah! for the track—

Pick and shovel have laid it;

It was work made the road

And a way through the land.

'Twas the unlawful feedin'

Of Adam in Eden,

That forced him to "trek"

From a garden so grand;

But old Adam had "savvy"—

He became the first navy—

And like MacAdam—his namesake—

Made roads through the land.

I have tramped many highways,

I've trod many bye-ways,

With pack on my back,

And stout stick in my hand.

I've no dollars to spare,

I can save railroad "fare,"

So I ride shank's mare

And I look on the land.

Let the man in a hurry

Just worry and scurry,

In the car let him rush

Past "views" pleasant and grand;

But I tell you tha my way

Is "for pref"—just the highway—

"The road," boys, the road,

Is the way through the land.

Would you view mountain scenery?

Or see forest greenery?

Then walk, ride or drive

Through this beautiful land—

Oh boys! They are "bally"

Every hill, and each valley,

So give us good roads—

We'll give you—the glad hand!

IDEAL LAYING QUARTERS.

Speaking of the dearth of fresh eggs which, on account of unseasonable weather was more pronounced than usual during November, when eggs, from perfectly natural and traceable causes, are apt to be scarce, a creameryman recently said: "The trouble is that farmers don't make the poultry houses warm enough. Hens must have warm houses to lay in cold weather," which statement I promptly challenged, and substituted the statement that hens need comfortable houses, but that comfortable poultry houses are not necessarily warm houses in the sense that the word warm is usually applied. For instance: Leghorn hens with large, easily frosted combs, will lay all winter in a house that is so cold that water freezes solid in a few hours on cold days and nights, and not even the tips of their combs will be frosted if their shelter is arranged right. For three winters I have kept leghorn hens in houses of the type I shall describe, and they have kept in perfect health and have laid all through the winter regardless of the weather.

The houses are ordinarily shed-roof frame structures built of rough lumber and covered on three sides with rubber roofing, the roof being shingled. The front which faces south has a wide door and a large window over which muslin is stretched. Now comes the crowning feature of the winter house, the scratching shed, which is quite unlike the usual scratching shed, in that it is made all of muslin. A wooden frame is made of two-by-fours, extending from the apex of the roof of the house in front to within a foot of the ground and placed three feet apart. Since the house is seven and a half feet high in front, this makes the roof of the shed about half pitch, since the frame measures at the bottom eight by sixteen feet, the same dimensions as the house. Foot-wide boards are nailed about the frame at the base to make it solid and also to make a windproof base, and when the frame is fastened solidly to the house the muslin cover which has been stitched strongly the size needed is stretched tightly over the frame, making a taut tent roof. This cover is securely fastened with shingle nails driven through lath to prevent tearing of the cloth and to hold it tightly and evenly in place, first, at the top to the house, and then to one side of the frame; then, one person stretching and another nailing, the cover is stretched straight and tight

and fastened down to each rafter and finally at the bottom to the top of the baseboard, using lath wherever the cloth is nailed. Muslin cut and stitched to fit the ends of the frame is then stretched and fastened in place, and the shed is complete. A wide doorway is left at the east, where the shed joins the house, and this is provided with both a wire and a cloth-covered frame. In stormy weather and at night the cloth-covered door is used, but in sunshiny weather, when it is too sharp for the fowls to be outside, the wire door will let in sunshine.

fowls come off the roost and out into the shed at the first peep of day and go to work in the straw, into which grain is always scattered at night.

In these eight-by-sixteen houses with sheds of the same size I keep from 30 to 50 hens, and they more than pay for the small expense and trouble of making the sheds, for when they get any sort of care they lay and they keep bright and strong and healthy. It takes strong, healthy hens to produce eggs in cold



FORT FRASER TOWNSITE AND LAKE, B. C.

This shed, filled with plenty of scratching litter, has proven an ideal shelter for fowls in all kinds of weather. It has stood the test of rain and snow and blizzards. It is light and airy, while it still excludes all draught from entering the roosting room, which is wind-proof on north, east and west, but gets all the ventilation it needs without direct draught through this muslin shelter.

On the coldest days it is cozy, and when the sun is shining it is really warm even though it may be zero weather outside, and the fowls will work contentedly in it all day and lay right along if the feeding and care are right. Fowls are open-air creatures, and this sort of a shelter furnishes air and light without exposure to wind. On very cold nights a muslin curtain is used at the inner door, but ordinarily this is left open and the

weather; in that fact lies the secret of winter eggs as much as in proper feeds and feeding. —Mrs. W. L. McKenney, in Kimball's Dairy Farm.

"Ouch, Mary!" he howled,
 "You love me no more!
 You've never worn pins
 In your belt before."

First Hen: "There comes the woman to drive us out of her garden."

Second Hen: "Yes, she's picking up a stone too. Let's fly out quick."

First Hen: "No, No! Stay here."

Second Hen: "But she's aiming right at us."

First Hen: "Yes, if we move we might get hit."

High Cost of Living vs. The Man Under the Mortgage

By MR. O. J. WIGEN, Creston, B. C.

Much has been written about the high cost of living, and lately one of the foremost papers in our Dominion has brought out the "The Man Under the Mortgage."

Let us take a survey and find what relation we find between the two.

We are all familiar with the meaning of "the high cost of living" as no creeds or clans have escaped its inroads and its encroachment is steady and persistent. Less do the majority of us really understand and grasp the true meaning of the words "The Man Under the Mortgage." This is intended to convey "The Man Behind the Plow, the tiller of the soil." The agricultural class, the oldest of all professions, which dates back to the time when Adam and Eve were thrown out of the garden of Eden and told to earn their bread by the sweat of their brow. A sentinel, which meant, they should go out, dig from the soil, gather from the fields, and forests, and extract from the depths of the sea, all that which is needed to feed and sustain life in the human body.

Quite a sentence! but it has religiously been adhered too, from that day till this. At first not a very hard task, as there was only one family and they all took part, but as their number increased and multiplied into communities and notions, they began to array themselves in clans and classes, each to take their respective stations.

The agricultural class, as the name implies, was given the task of producing the food for them all, quite a responsibility, if you please!

The humblest and less educated were all consigned to the agricultural class, and until quite recently constituted by far the greatest number.

Looking into the evolution of all the classes, we find there began a strife, and struggle for supremacy amongst themselves, which from one generation to another intensified, sometimes the sword, at other times the brains, and then again the pen, had the upper hand; but they all gained experience,

became more skillful and expert in their different callings, until we finally emerged on the plains of our present day civilization, when it appears that the money has the upper hand.

Now please draw out your lenses and locate the class with the base of your supply, (the agricultural class) you will see it far in the rear, deep down in the valley, trailing away, sweating under the rays of the sun trying to fill the orders of your supply corps, lest you may suffer want and starvation.

In all your cunning, captaincy and generalship, you have overlooked the Emperor's supreme order "Keep your base of supply close up to your main body, do not permit it to drag behind; or dire disasters may overtake you." What do we find? We find that by the development of your brains, aided by inventions, you have taken a spurt in the march of progress, not with the speed of an ordinary vehicle, but with that of a locomotive, and now you are about to take wings and conquer the air, in search for that, which you call riches, wealth, comfort, and influence, and left the army, forming your base of supply, hopelessly in the rear, instructing it to bring up as best it can. Have you not overlooked another fact? That true riches consist first of Health, second, Ideal surroundings, and last, but not least, contentment of heart, by a well fed, well nourished body; combine the three, and you will have the sum and substance of an ideal condition, as a tenant in the garden of Eden.

The first we can get by adhering as near as possible to the law of nature, the second we have in abundance literally heaped up all around us, created by the great army of your industrial workers assisted, taught, trained and guided by science, inventive genius, captains of finance and industries, and navigated by our men of state.

But the third, the base of supply for bread stuff, the fruit and agricultural class, this is left hopelessly in the rear, away out of touch

of economic communication with yourself and army of industrial workers; by so being our efficiency in coping with your demand, is greatly reduced. The long complicated method of transportation brings in a string of middlemen, to be supported, you move on wheel and wings and expect the main body of us to follow up, in our old styled push-cart.

Your brains have been enlarged by ingrafting with up-to-date modern science, and tenderly nursed, until fully developed.

Our brains have as a whole, been kept dormant to absorb and develop as best they can from the overflow of your's, by the slow progress of porculation.

There is only one illuminating line, in our rank and file amongst the fruit and agricultural class, and that is the front.

You captains of industry, generals of finance, and men of the moulders of the States, please come along that we may show you the true conditions in the rear of our rank and file; but before we do so, let me assure you that you shall be protected, feted, and looked up to, and safely escorted back to your responsible positions.

But we realize, that only by showing you the real conditions at the rear of your rank and file, will you be fully qualified to select the most effective method and equipment necessary to cope with the demand for bread-stuff and to bring it forward in the shortest possible time, for your hungry industrial workers, that they may become docile and content for renewed spirit in the march of progress.

You are well aware that when the stomach is empty and the pangs of hunger gnaw at its tissue, the owner becomes rebellious, loses his power of reasoning and often becomes mob-like, and in its stampede starts to tear down its own construction.

Now please come on, and we will explain as we proceed: First, we must pass through the front rank of our fruit and agricultural army, and here your eyes will meet the sight of an underworld of splendor, acres of waving, luxurious fields, and meadows of grain and grass. In the orchard thousands of trees bending down their branches loaded with the most wholesome and appetizing fruit, inviting you to partake; along the lanes and by-ways you are surrounded by flowers, shrubs and bushes, dressed in their shroud of can produce. There is a state or condition can produce. There is state or condition nearly bordering to earthly perfection, smiles and content on all sides, an overflow of

the most wholesome, toothsome and nourishing supply of grains, fruits and provisions, a utilization of all the modern improvements and equipment for economical production, comfort and convenience, the latter of which you are creating, improving and perfecting, by your brains and the handicrafts of your industrial workers. Well may you envy the possession of such combination!

As we proceed further, we will find that modern improvements for comfort and convenience gradually disappear, and finally also the modern improvements and equipments for economical production.

The fields and orchards assume a contrast to that we observed in the front ranks, which is depressing—want and neglect predominate on all sides and an enormous waste is taking place. Great mounds of grain of all kinds, tools of every description are exposed to the tempest of wind and rain, also dilapidated buildings, and if we look closer, we find attached to most of the fields, orchards, agricultural implements, horses and cattle. 'A ten per cent evaporation plant,' in the shape of a mortgage, but without a proper safety valve. And should it happen, that from some cause or other, or inability to remove the plant, the flow of evaporation stop, it will explode, and in the ruins of this explosion is where you will have to dig out "The Man under the Mortgage," and very often you will find him maimed for life. Our present-day method of financing the fruit and agricultural industry reminds one of the friendly disposed bear, who undertook to keep the flies away from his master's face while he reposed in peaceful slumber: As the bear landed out its paw to wipe the flies away, he crushed his master's face. Lord only knows how many he crushed, but no one seemed to take particular interest in padding the paw of the otherwise intelligent and well trained animal.

At this juncture let me relate a little incident as observed on my visit to Victoria not long ago. The B. C. Fruit Growers' Association was in convention, and as a member I attended its sittings, which proved to be one of the most pleasant and instructive gatherings in all its history. Among the many hundred speakers was the Premier, whose address was most pleasant and pliant, and had the stamp of a statesman of the highest quality and would have closed without a ripple, had he not bumped against a stump. I cannot tell if it hurt, but when he got his wind, he said in substance as

follows: "Gentlemen! When it comes to pulling your stumps, I stop!" It struck me that the bump must have affected his memory, in as much as assisting us pulling the stumps is exactly what he has been practicing in my locality, Creston, B. C., for the last three years, by getting us from 25% to 35% reduction on stumping powder, and thereby pulling at least 10% of our stumps without cost to us, or did he mean to convey that what is practical on a small scale is commendable on a large? If so, his late railroad policy does not confirm it.

The convention had nearly come to its close without a discord, when all of a sudden I observed what to my judgment appeared as "two political wires"—from whence they were strung I could not tell. I could only regret their presence, as political shades should be religiously excluded from our agricultural department, not only at home, but also in its zone of operation out in the fields and orchards amongst the farmers and fruit growers, where we should all meet in the common effort for the production of more and better fruit and breadstuff.

Another observation on the same trip: In strolling along the congested streets of Vancouver, I came suddenly to a halt before a large plate glass window, inside of which loomed up one of the marvels of the 20th century: An up-to-date, modern printing press.

The hugeness of the thing struck me with awe.

Here was the image of the engine room, as in and off our great ocean liners, only a thousand times multiplied in its complicated perfection of mechanism.

Stairways and gangways surrounded it, leading over, around and under it, and into its mysterious interior. A corps of engineers stood around and, as it began to move and feed at the rear from half a dozen or more giant paper rollers, it began to cough out, in the front, intellectual food at the rate of fifteen thousand copies per hour, in the form of (don't know how many pages) newspapers, folded and completed to be assimilated and digested by so many intellectually hungry subjects. As it continued to feed and deliver its products it particularly struck me with what keenness of interest each engineer picked up a copy, hurriedly turned its pages until he found the one, as I thought, came under his charge, scanning its columns for error or deficiency and, if any, shot like an arrow back into the mysterious recesses

of this great body to adjust and perfect, until within half the time it takes to tell, everything was moving smoothly and perfectly.

What a marvel! I wished that we as a class occupied in production of food for the physical man, had attained such a skill and perfection as you, in your production of intellectual food. What a contrast with your method some years ago! Now let us proceed farther down the line, the fields become more desolate, the orchards affected with scales and fungus, the cattle and beasts of burden haggard and ragged, bearing evidence of want and neglect. The farmers themselves began to have the same stamp, modern tools and practical appliances have become distracted; you began to feel a chill, that here is still greater wants and a crying need for drastic methods, so as to elevate the rear of this great agricultural body with a speed commensurate with the scientific movements of our present time, such as is practiced in all of her industries. You will also note that the great bulk of your scientific, intellectual distribution scattered broadcast amongst this army does not arrive in digestible form, but that they must first be trained to ing(ms.. tstrungrfC;m.giraltrainedand.cS, to assimilate it.

For this purpose you must first equip a trained corps, skilled not only in scientific treatment of the soil, but also in economy, commerce and finance, and send them out to stay amongst us, like other good emissaries.

The prevailing mode of educating the average farmers in the science of agriculture (the greatest of all sciences) reminds one of the learned scholar who undertook to teach his class arithmetic by starting with algebra.

You captains of industry, general of finance and men of States, combine and capitalize for developing the greatest gold mine the Creator ever deposited on this blessed globe of ours; but please develop it with the soundness of judgment as that which characterizes you in all your other enterprises.

I note that some of you are plungers, but when you see the handwriting on the wall by such illuminating star on the horizon as that of Sir Edward Walker, warning us not to load the future with our debt, beyond the life of its security, then may you well afford to lend the government a hand, in developing the fruit and agricultural industry, the fundamental wealth for all securities (not an inflated wealth, as that flowing in over the border from the South, and across the Atlantic from the East, in the form of gold

coin. This foreign wealth is at first dazzling and agreeable, but has an enormous absorbing power, as it multiplies and is handed down to our grand and great grand children, when it became burdensome), on such a scale as would be commensurate with the development of those in other industries and walks of life.

This can best be done by starting at the rear, pruning and cultivating the roots of its construction. "The humble farmers." It would be a policy of prevention and not a cure, and science has conclusively proven that it is the only effective remedy for all evils.

Similar movements have been started in the States of Minnesota and the Dakotas, whereby bankers and leading financiers have combined with the State to educate young men for the work of going out amongst the farmers and fruit growers and so to speak, learn them the A. B. C. in scientific farming, fruit growing, marketing and financing.

This movement taken up less than thirty years ago by Denmark, has transformed it from one of the most backward nations to the front rank in Europe.

Multiply the size of Denmark with that of the size of our fair Dominion and you will find the position of our country twenty-five or thirty years hence, as a shining beacon for other parts of the world to steer by, just as we now look up to Denmark as our guide; but, like Denmark, we must give assistance and start education in the rear rank amongst the farmers and fruit growers—not only with a small dose at the front, as we now are practicing.

A FALSE SIGNAL.

Railroad men out west are so accustomed to communicate with each other by means of gestures that the habit of looking for such dumb signals becomes a kind of second nature. One day, at the headquarters of a Canadian railroad, a complaint was received that a valuable cow had been killed on a certain day and by a certain engine. On reference to the files no report from the engineer was found; he was sent for and asked regarding the complaint.

"I didn't know I hurt the cow," said he. "Then you remember hitting her?"

"Sure, but I slowed up as she rolled over on her back; but she waved her foot for me to go ahead, so I concluded she was all right."

WHEN FATHER CARVES THE DUCK.

We all look on with anxious eyes
When father carves the duck,
And mother almost always sighs
When father carves the duck.
Then all of us prepare to rise
And hold our bibs before our eyes,
And be prepared for some surprise,
When father carves the duck.

He braces up and grabs a fork
Whene'er he carves the duck,
And won't allow a soul to talk
Until he's carved the duck.
The fork is jabbed into the sides,
Across the breast the knife he slides,
And every careful person hides
From flying chips of duck.

The platter always seems to slip
When father carves the duck.
And how it makes the dishes skip!
Potatoes fly amuck—
The squash and cabbage leap in space,
We get some gravy in our face,
And father mutters Hindu grace
Whene'er he carves the duck.

We thus have learned to walk around
The dining-room, and pluck
From off the window-sills and walls
Our share of father's duck.
While father growls and blows and jaws,
And swears the knife was full of flaws,
And mother jaws at him because
He couldn't carve a duck.

—Ernest Vincent Wright.

THE BIRTHDAY CAKE.

She measured out the butter with a very solemn air;
The milk and sugar also; and she took the greatest care
To count the eggs correctly, and to add a little bit
Of baking powder, which, you know, beginners oft omit.
Then she stirred it all together, and she baked it full an hour;
But she never quite forgave herself for leaving out the flour!

END OF WAR.

'Twas said: "When roll of drum and
battle's roar

Shall cease upon the earth, O then no more
The deed, the race, of heroes in the land."

But scarce that word was breathed when
one small hand

Lifted victorious o'er a giant wrong

That had its victims crushed through ages
lang;

Some woman set her pale and quivering face,
Firm as a rock, against a man's disgrace;

A little child suffered in silence lest

His savage pain should wound a mother's
breast;

Some quiet scholar flung his gauntlet down

And risked, in Truth's great name, the synod's
frown;

A civic hero, in the calm realm of laws,

Did that which suddenly drew a world's
applause;

And one to the pest his lithe young body
gave

That he a thousand thousand lives might
save.

—Richard Watson Gilder.

NOT FOR A LONG TIME.

The late Bishop Williams was sitting in a box in an opera house where collegiate commencement exercises were being held. The toilets of the ladies were extremely elaborate. After looking around the house with an opera-glass one of the ladies exclaimed:

"Honestly, Bishop Williams, did you ever see anything like it in all your life?"

"Never," gravely replied the Bishop, "never, madam, since I was weaned."

THE DIFFERENCE.

The late Marshall Field had a very small office boy, who came to the great merchant one day with a request for an increase in wages.

"Huh!" said Mr. Field, looking at him as if through a magnifying glass. "Want a raise, do you? How much are you getting?"

"Three dollars a week," chirped the little chap.

"Three dollars a week!" exclaimed his employer. "Why, when I was your age I only got two dollars."

"Oh, well, that's different," piped the youngster. "I guess you weren't worth any more."



SITE OF LAKEVIEW GARDENS, NEAR KAMLOOPS, B. C.

The Little Apricot Cutter

AN AUSTRALIAN ROMANCE

By Mrs. M. Ella Chaffey

SYNOPSIS OF PRECEEDING CHAPTERS

Helma Johnson, the Little Apricot Cutter, lives with her mother on the banks of the Murray River. Her stepfather, Dr. Fourfields, is at the Mines in Western Australia. He has not written for a long period and they are in poverty. Helma works during the fruit harvest for the support of herself and her mother. While cutting apricots she meets Valtin von Bergen at his father's plantation and they fall in love at first sight. An engagement is disapproved of by the mothers of both, for different reasons, and Helma's mother requires her to give up Valtin entirely for two years.

"My mate's welcome to claw my hair all he likes," said the sailor, who seemed suddenly to wake up to his surroundings, after having ignored all previous remarks. "It's not a pretty crop anyhow,"—and he pulled off his cap with a grin and displayed a tangled shock of red locks.

The cockatoo instantly seized on a promising end with his beak and proceeded to draw himself up by it until he stood triumphantly on the crown of his owner's pate, with his claws firmly embedded in its hairy covering.

"Landsakes!" cried Mrs. Tooby, horrified beyond measure at such an exhibition. Whereupon the bird elevated his crest and after a few preliminary screeches, by way of clearing his throat, sang "Tara-ra-boom-deay," in a very nasal voice, but with due regard to time and tune.

"Down with you, Daff!" said the sailor when the performance was finished, at the same time giving his head a violent shake, which made his meaning clear to the cockatoo, who obediently descended from his perch and began to beg for something to eat. So at least the sailor explained the bird's actions; he softly rubbed his head against his master's cheek, much as a cat does when it wants to be stroked.

"He's a clever bird, I haven't the least doubt," Mrs. Tooby remarked with condescension, as they all watched Master Daff (short for "Daffodil," they were informed by the sailor-man—dispose of a sweetened sop of bread and water—"But why don't you treat him like a Christian bird and carry him around in a cage,—instead of perched on your shoulder, tearing holes in your clothes and mussin' you up generally?" Her tone indicated infinite disgust.

"Me and my mate understand each other," the man replied shortly.—"We've trotted around the world together for the best part

o' ten years now, and him and me we allus travel first class,—or leastways, second. Afore I kick the bucket myself I mean to wring his neck for him,—for he don't like no cages, nor perches, nor chains neither."

Before their thirty-six hours' drive, through day and night, over rough, newly-made roads, across bleak and barren country, was completed, the four occupants of the coach interior had become very good friends. There were two other passengers on the driver's seat,—an Englishman, who had the unmistakable appearance of having lately arrived from "home," and a foreign-looking man in picturesque mining dress. But these two kept themselves to themselves, having apparently some interest in common, and Valtin did not so much as learn their names.

They passed many travelers, proceeding, though more slowly in the same direction as themselves. Men, alone, but more often in small parties, on foot, on horse-back, leading pack-horses; wagons loaded with provisions and camping outfits, and sometimes with men, women, and even children. Once or twice they overtook a small train of camels that formed a procession of Oriental appearance and wonderfully enhanced the interest of that desolate landscape.

As yet there had been no rain to renew the verdure which the summer sun had withered. The country was uniformly flat, except where the straight line was relieved by rocky elevations which here and there pushed themselves unexpectedly in irregular ridges through the sandy soil. There was no beauty in the landscape, save only that grim beauty of desolation which even the most abandoned spot may claim.

During the last night of their journey, the much-needed rain descended in torrents, reducing the roads to an almost impassable condition.

"Ay, but this is glory! This is glory!" cried Dick Tooby exultantly, every time the rain which blew through the ill-fitting windows, trickled down his neck and woke him up.—"This rain'll mean hundreds of pounds in our pockets!"

"I wish it had waited till we were safe under a sound roof then," grumbles his mother, sleepily.

"Salt water's the only water fit for a Christian to wet himself with," growled the sailor. He had the leakiest corner of the leaky old vehicle and was not very amiable in consequence,—and the cockatoo, who was a highly civilized bird and seldom went to sleep either by day or night, began to swear softly.

"He does it for me," his owner had before explained, when his fellow-passengers wondered at the bird's proficiency.—"It saves me a lot o' trouble!" he added with a chuckle.

Next morning, a couple of hours behind time, their journey came to an end. Considering the state of the roads they judged themselves lucky to get through at all, and congratulated each other as they tumbled stiffly out of the mud-encased mail coach.

"Welcome to the "Travellers' Roost," Mr. von Bergen," cried Mrs. Tooby, as they found themselves, a damp but cheerful party, at the door of that hospitable hotel.—"I make no doubt but my son Tom'll have a good hot breakfast waiting for us. So walk right in."

In they went, the sailor and his cockatoo bringing up the rear.

A cheerful wood fire in the vast, white-washed fireplace soon dried their clothes and took some of the stiffness out of their bones, and whatever else was needed for their complete restoration was supplied by the ample and appetizing meal to which they were soon invited to sit down.

To be sure their hostess looked askance when the cockatoo walked across the tablecloth and helped himself to a lump of sugar out of the sugar-basin; but as the sailor had announced his intention of proceeding on his way as soon as the meal was over, she forbore to banish the bird to the kitchen, as she was inclined to do, and only whispered audibly to Valtin,—

"Of all the cheeky creeturs! I never did see the like!" leaving it doubtful whether she referred to the sailor or his pet.

"Well, we must be movin' along, I suppose," the former said, as he reluctantly laid down his knife and fork and drank the dregs

of his coffee. "Where are you off to, young man?" he inquired suddenly of Valtin.

"I want to look about me a little," Valtin replied, for he had made no definite plans as yet.—"Do you know where most of the work is going on?" he asked, in his turn, of the Tooby brothers.

"Out in the neighborhood of the Big Crab Hole they've made some good finds lately. I'd poke about there a bit if I was you. Like as not you'll hit on something rich "was the encouraging reply.

Further questions elicited the information that the Big Crab Hole lay about two miles across the flat from the Travellers' Roost,—which was situated on the extreme edge of the small township. Without much consideration, Valtin having nothing better to do, took the advice offered him, and, leaving his belongings at the inn, he set out to walk in the direction pointed out,—the sailor-man having already taken himself and his mate off.

"You'll come across two or three camps around the Crab Hole. There are some furriners working a claim for staking out. I here hasn't been a rush yet, and now's your time. So goodbye and good luck to you!" called the Tooby brothers in cheerful unison down the muddy road, full of the elation that from the front porch, as Valtin strode off a new enterprise brings with it.

CHAPTER II.

A Meeting With Consequences.

As Valtin trudged along, through puddles of water and mud, with his felt hat well pulled down over his eyes, to shade them from the dazzling rays of the sun which had all but broken through the heavy veil of clouds that had covered the sky for twenty-four hours,—he fancied, when he had made about half the distance that lay between the Big Crab Hole and the "Travellers' Roost," that he heard a sound of singing ahead of him.

He pricked his ears to listen, but the sound ceased almost immediately, and he heard no more until a sudden turn in the road, around a small grove of undersized trees, brought him, without warning, face to face with a vision as charming as it was unexpected.

"Aie! Aie! But! But! This mud is terrible! I beg that Monsieur will have the 'politesse' to aid me around this corner!"

The request was proffered by a lady, young, dark, tall and slim. She was also beautiful. Valtin had hesitated to decide whether

Helma was pretty or not, but there was no hesitation in his mind now as he instantly did obeisance to the undeniable beauty of this charming apparition.

She was coquettish, too, to a degree.

Her dress, which was stylish and fitted her slender figure to perfection (as well it might, since it was made in Paris), was held gathered up in one hand, higher even than was necessary in that sea of mud and water, and displayed two bobbing black silk tassels that adorned the tops of her high kid boots. With her brilliant black eyes she gave Valtin an appealing, bewitching glance, at the same time extending the other hand for assistance.

To say that this vision of Parisian grace and elegance in the midst of the howling wilderness, at Possum Tail Ridge, that is, was disconcerting in the extreme, does not half express the situation. Valtin could not have been more surprised had the bend in the road brought him suddenly upon the gravelled walks and blooming trees, the music and illuminations of the Champs Elysees.

He had presence enough of mind left to seize upon his hat and hold it at arm's length, deferentially, as he hastened to give the assistance the lady required.

But she had by no means done with him yet. It was not every day that Amanda Territet had the opportunity of conversing with a youth so tall and straight and good-looking, and moreover with such good manners, as this new acquaintance.

"C'est un gentil garçon!" she said to herself, as, after taking one step through the mud, she paused once more, and removing her hand from Valtin's under pretext of still further arranging her skirts, she began to talk again, in pretty, broken English.

"But I am all shame to have so much trouble Monsieur! And Monsieur is a stranger, too, as one may see. But veritably, Sare, this mud have turn my head. It is terreable! And I who am all my life been used to ze boulevards of Bruxelles. But yes, Monsieur, you will have well perceive that I am not English I talk vary bad English! My home is in Bruxelles,—beautiful Bruxelles. Only a little while I live in Paris, and that is still more beautiful. But this," she added, suddenly changing from a tone of tender reminiscence to one of vehement scorn, "this is a country of 'sauvages,' of wild men, I say. But perhaps," she added, once more tenderly, "it is the country of Monsieur. Zen I must only speak good of it, since Monsieur is so kind!"

These last words were accompanied by another glance from the dark eyes, at once languishing and coquettish, and Valtin, who had been on the point of finding his tongue when she talked of Brussels and Paris, felt more than ever bewildered, and was mute.

Once more she reached out her hand and another step was taken. Then again she stopped and continued her chattering. Her voice was clear, incisive and musical. As she stood, gracefully poised on her point of vantage amidst the surrounding mud, her little hat, unobtrusive as the true Parisian hat always is, setting off the animated face, she made a charming picture.

"But I must explain to Monsieur," she went on, "It is but right, for Monsieur must not sink too bad of me, who ought to be at the house this morning, attending to ze menage, instead of spoiling my 'bottines' on ze terreable road. It is so, Monsieur; I go meet my friend, who arrive zis morning on ze coach. My friend is also French. Perhaps Monsieur have met him 'en route?'"

Valtin remembered the picturesque miner on the box seat, but only replied, "No, he had not had the pleasure."

"He is my friend. That is all," said Mademoiselle Amanda, and Valtin thought he detected a wistful look in the dark eyes, as they glanced away from him into the thicket of jarrah trees.

But in a moment she was herself again and as vivacious as ever. Two or three more steps were taken, Mademoiselle stepping very lightly and deftly over the bad places, although she did not fail to utter small screams of alarm and even once felt obliged to support herself on Valtin's shoulder when a specially perilous gap had to be crossed. When this last was accomplished, she paused again, to rest from the exertion and to refresh herself and Valtin with conversation.

"Monsieur will pardon me if I tell him my name. It is Amanda Territet, Mademoiselle, 'bien entendu,' and again the bright eyes flashed. "I live with my 'bonne,' old Marie Simple. I have two brothers also, but they are at the Camp with 'mon ami,' the Baron Mais oui, he is a Baron, but he is not well pleased to be so call now. Only when he has found much gold and made 'grande fortune,' then he will take his title. And I," she added, with an exaltation she vainly strove to conceal, "I then shall be Madame la Baronne."

Valtin began to think the interview had lasted long enough and reached out his hand

as a gentle hint that he was ready to help her over the remainder of the difficulties that beset the bend in the road. She took it, then paused, ready to step, but still chattering.

"But yes, a *demoiselle comme il faut*" must have a *"bonne"* with her, a maid, you say. It is what I told my brothers when they wanted to send Marie away. Since my poor papa he die,—” She stopped short and uttered an exclamation of surprise, not untinged with dismay.

"Ah——mon——ami!” she said.

The man who at this moment appeared around the edge of the thicket, was the same who had shared with the English "new chum," the box-seat on the coach. He was tall and striking-looking, with a keen, aristocratic face and small, black eyes that were both sharp and unscrupulous. He wore a long, drooping moustache and there was a good deal of the dandy, or "poseur," about his appearance, in spite of his rough, coarse dress, and nonchalant manner.

With the swiftness of lightning his glance shot from the lady to Valtin and back again, and for an instant there was an evil glimmer of jealousy in those usually impenetrable orbs, which Mademoiselle Territet was not slow to perceive.

"Good day, Mademoiselle!" he then cried, in lightly genial tones as he gracefully lifted his hat, and there was not a trace of vexation to be seen in the face he turned to them.

"Monsieur do have the *"obligeance"* to assist me over the terreble mud, *"Natole,"* said the lady, as with one agile spring, she landed on firm ground and released Valtin's hand. "Monsieur is a stranger and do look to see ze place a little, he do tell me, and to find a good occupation. Is it not so, Monsieur?"

Valtin, disagreeably surprised at hearing plans assigned to him when he had hardly made any for himself as yet, murmured some thing that might pass for assent. He would not contradict the charming Frenchwoman to her face, but he avoided her glance, which he felt rather than saw to be both mischievous and appealing. "Perhaps you may have money to invest, Sir?" queried the so-called Baron, in excellent English.

"Not as yet," replied Valtin, vaguely, "I merely wanted to look around first,——"

"And invest your money afterwards. Quite right, Sir. I dare say I could put you on to a good thing if you wanted a hint."

"I am in no hurry," said Valtin, cautiously, "But if you can tell me where I can get some work to do to keep me going for the present, I shall be glad."

After all, the course that Mademoiselle had mapped out for him would do as well as another.

"Well, I dont know about that just now," replied the other, in his easy, flowing English, which only an occasional intonation betrayed as not being that of the well-bred, cosmopolitan Britisher. "It is possible that I might hear of something—"In fact,——" here he broke off and began talking rapidly to the lady in French, Valtin, who possessed but an inconsiderable book-knowledge of the language found it impossible to catch even the drift of what passed between them.

"Well, sir, I'll tell you what I'll do for you," the Frenchman said at last, turning again to him. "I have a pretty good little reef myself, payable, you understand, on which I and two compatriots, the brothers of this lady," bowing politely to Mademoiselle Amanda, "are working. A third share in our claim belongs to an Englishman who lives with us in the camp, but who is at present ill and unable to work. If the others are agreeable to it, I propose putting you on to work in his place. That is of course if the plan suits you. You might do worse. You will be at no expense; you will get the usual wages; and you will be getting experience in the mining business."

Valtin hesitated only because the man's plausible readiness aroused involuntary suspicion in his slower, Teutonic nature.

He asked two or three unnecessary questions about the situation and nature of the reef, all of which were answered with the utmost good-nature by the Baron, who seemed anxious to give him all the information possible. He soon knew the main facts about the locality called the Big Crab Hole, what work had already been done there and what its outlook for the future was, in the Baron's opinion. While they talked, Mademoiselle, who had subsided into sudden quietness, occupied herself by gathering twigs from the thicket, which here and there showed a few leaves of bright autumnal coloring.

In the end Valtin agreed to accompany the Baron to the Camp to see the other owners of the claim and the three set out together to continue their walk.

This time, however, it was the Baron who assisted the Lady over the mud puddles.

About half a mile further on they came to a neat iron building with a verandah in front, where a few pots of flowers and one or two rustic chairs suggested that some one had been trying to take off a little of the bareness of a residence among "wild men."

Here Mademoiselle left them, with a gay "au revoir," running up the path with light swiftness and turning again to wave a second farewell.

After walking a few minutes more they reached the camp and here Valtin was introduced to the sick Englishman, and, later, when the dinner hour brought them in from their work, to Mademoiselle's two brothers. These had none of their sister's charm of manner, or wit. One was heavy and outish; the other, sharp and shifty in appearance; and both were decidedly unprepossessing. They talked but little English, and although the two together were supposed to own a third share in the claim which Valtin now heard spoken of as the "Fleur de Lys," they seemed to have no voice in its management, but were in regard to its concerns, and everything else, completely under the control of the Baron.

The Englishman was introduced as Mr. Harry Fairfax, familiarly known as "Old Harry." He was a man well past middle age, with pleasant manners and a sympathetic, caressing voice.

"I hope you'll come to us, Mr. von Bergen," he said, after they had all joined in a free and easy camp dinner, and he shook Valtin heartily by the hand. "I'm in the minority here, you see. All 'furriners' except me," waving his hand towards the others. "I daren't even toast the Queen without asking leave first."

"We'll toast her now!" cried the Baron, with a sarcastic laugh, as he brought out glasses and a bottle of whiskey.

It ended in Valtin joining the camp and working on the "Fleur de Lys," although it must be confessed that he stayed against his inclination, and to some extent, against his better judgment. He still suspected the Baron of being a sharper, and the Territet brothers were still less to his taste, but he yielded to the Englishman's solicitations in the matter. The Baron refrained from pressing him, in fact, grew strangely cold towards him after having introduced him to his companions. He seemed to regard Old Harry's hearty reception of the young man with jealous disapprobation; but Valtin paid little attention to his change of mood. He felt

drawn to cheerful, weak, broken-down Old Harry, who to all appearance was in a rapid decline, and for his sake he resolved to stay.

So the four well men worked side by side in the mine, while the invalid Englishman spent his days in an old steamer chair, creeping out into the sunshine, sometimes, on a warm day, his only and too frequent solace being "toasting the Queen," as he facetiously called his patronage of the whiskey bottle.

CHAPTER XII.

Indian Jack Settles an Old Score.

Possum Tail Ridge,
The Old Crab Hole,

May 21st, 18—.

My Dearest Little Girl:

I have been settled here one week and am working with three other men on a claim which is called the "Fleur de Lys." The three men I mentioned are foreigners—French and Belgian.

According to our last agreement I was to wait two weeks before writing this letter, which you said was to be the only one. But a week sooner or later can't make any difference, and I'm in a hurry to hear from you, sweetheart. Even to write to you is something, and brings the time nearer when I may expect a letter back. Don't forget that you promised to answer me, even though it were only a few lines. But if you write at all, Helma—and of course you will—make it a long letter. To that stern parent of yours a letter is a letter, short or long—but not to me. So if I am to have only one, little girl, make it long.

Do you think of that happy fortnight in the vineyard as I do? Never a day passes that I don't think of it and remember some word or look of yours that I had not recalled before. It was a perfect time, and sometimes I wonder if we shall ever have another like it.

"Many more, and better!" I can hear you say. You are always so cheerful, my brave little girl, and you don't rail at unkind fate or mothers, like I do.

The knife stays always in my inner coat pocket—nearest my heart, you see. I haven't brought myself to use it for common work yet, but I take it out and look at it often, and remember that first day at the cutting shed.

We had fine weather on the sea and the trip was pleasant rather than otherwise. The coach journey was rough, but I didn't mind

that. It was rather amusing to make notes on one's fellow-travellers. There was a man with a cockatoo, that perched on his shoulder, and which he called his "mate." The two of them have a small tent not far from our camp here now, and I see him often. He's quite a character and a good fellow, and he and his bird afforded us a good deal of amusement on the journey.

The way I happened to light upon the Baron, the Territet brothers and Harry Fairfax, or "Old Harry," as they call him—(these are the joint owners of the *Fleur de Lys* claim)—and to engage to work with them, would make rather a good story. But it would take too long to write it all down in a letter, so I'll tell it to you instead someday, sweetheart.

By the way, while I'm working for the Baron I've set the man I told you about above, and his mate, the cockatoo, prospecting for me. He's an old hand at the work, he says, having been at it ever since he left the sea. But he hasn't made a find yet.

I don't care much for the foreign element in our camp, but the Englishman is a good fellow. One can't help being sorry for him too, dying out here, away from all his friends, if he has any. He has consumption, and he can't last much longer.

There is a Frenchwoman who lives a little way from us. The Baron is going to marry her some day—at least, she thinks so. She is very pretty, and she knows it; and she thinks she knows how to make herself charming. She doesn't charm me, however. How could she, when I left all my heart on the Murray, in my little girl's keeping. At the same time I pity her—Amanda Territet, I mean—for she seems to be quite alone in the world. Her two brothers are miserable specimens of humanity. She is flighty and frivolous, and foolish, I suppose, but she's too good for the Baron, who is a villain if I am not very much mistaken.

The life here is interesting and exciting, in a way. People talk and think about gold all day long. On the whole, they don't see much of it, but there is always the hope of more to keep up the excitement. Still I fancy if my partner, the sailor man, doesn't make a find for me, and I fail to strike it rich, I could go back to the mild interests of fruit-growing without much regret.

Nothing grows here, not even a cabbage. Mademoiselle Amanda, the French lady, who, by the way, is a sister of the Territet

brothers, who have a share in the "*Fleur de Lys*," has a few flowers in pots, and I have been at her house once or twice more for the pleasure of seeing something growing and being cared for than for the sake of Mademoiselle's society.

My poor little sweetheart, I'm glad you are not here. It is a poor place for a woman, and I feel sorry for the few specimens of the fair sex I see; and they are not many. The only exception is a good, comfortable body at the inn here; she seems in her element rather than otherwise, and is a mother to all the miners in the Ridge.

Good-bye, Helma, dear. I can't promise not to write again, but I shall try and be moderate, for fear that tyrant, my little girl's conscience, should make her return my letters unread!

Once more, make the letter long, sweetheart. Every word will be better than a nugget of gold to me. Good-bye, dear love. God bless you.

Your own,

VALTIN.

This voluminous letter, of no interest to any one but the person to whom it was addressed, was tied up in a bundle with others, and reposed in the pocket of the Narratooon baker's man, who sometimes undertook to deliver the mail to customers who did not find it convenient to visit the post office on mail days.

The gossip Christopher had taken his departure for parts unknown, and his position was being filled temporarily by Jack Trevelyan, who happened to be out of a job at the end of the fruit season.

The world had treated the swarthy half-breed unkindly of late and he was meditating turning his back on Narratooon, the Murray and Australia generally, and returning once more to his native shores.

His heart still clung fondly to Sue, who, in her turn, was faithful to her often absent but still fairly constant admirer, the Commercial Traveller. Jealousy and hate raged together in Indian Jack's bosom whenever Sue's stylish lover visited the township on his way up and down the river. And in the intervals—when the coast was clear, but all to no purpose, since Sue passed him coldly by—he was a prey to the deepest despondency.

"Life ain't worth hangin' on to for another minute," he muttered to himself that morning, as he viciously whipped his horse, while driving towards the gate of the Narra-

toon Paddock." At least, such a dog's life as I lead now. I'll drown myself if I stay here much longer—and, by gum, there'll be plenty of water to do it in," he added, grimly, as he pulled up short at the Paddock gate and looked out over the fast broadening stream, whose insinuating waters had already crept to within a few feet of the nearest post in the fence.

It was now early in June and the usual winter rise had already filled the river. Last year's high-water mark had been surpassed even now, and people predicted such a flood as had not been seen for years when the snow waters came down—which would be in a couple of months.

Indian Jack drew the letters from his pocket and proceeded to sort out those for his next stopping place, which was Mrs. Fourfield's cottage. He was still pondering moodily on Sue's heartlessness and his own misery, so that he passed the entire budget through his hands twice before he brought his mind to what he was about and took the trouble to read the superscriptions.

One letter he picked out and laid on the seat beside him—and then another, which was Valtin's. He paused before laying it down to examine the post mark.

"Possum Tail Ridge, W. A." That's where the boss's son went to. He was sweet on Helma Johnstone. Her as Sue called the "Little-un." That was plain enough to be seen by any one who had eyes in his head at the grape-picking. They've fixed it all up, I suppose, and now he's writing to her. Won't the little dear be happy when she gets it?—if she ever gets it," he added with an ugly scowl. "Lots of writing in there"—he felt it critically between thumb and forefinger—"A pity to throw away so much good paper and ink. But I owe you a grudge, Von Bergen, and I never forget to pay off old scores, I don't. You give me a licking once, all along of that same little apricot cutter, and by—— I'll never have a better chance to get even with you both!"

Deliberately he got down from his cart and looked around to see that there was no one in sight. Then he stepped over to the shallow flood, which was almost at his feet, and after tearing poor Helma's letter in pieces, threw it into the water. The scraps of paper floated too near to suit him and he took a dry branch lying near and with it beat them under the water.

Then, with a countenance expressing the satisfaction of gratified spite, he stepped brisk-

ly up to the gate, opened it, mounted his cart and rattled on till he drew up at the Fourfields' cottage, where Helma came out to take the bread from him.

She was on the look-out for him, for though it was too soon to expect a letter yet, since Valtin was to wait a fortnight before writing, still there was a possibility that he might not keep strictly to their agreement—and besides the mails were so irregular from those distant parts. A letter *might* get through much sooner than Valtin thought likely when he left.

A shade of something very like disappointment crossed her face when Indian Jack handed her one letter only, and that addressed to her mother.

"Is that all" she asked, raising wistful brown eyes to his face.

"That's all today, Miss Johnstone," responded Jack Trevelyan, with unnecessary cheerfulness, as he gathered up his reins and wheeled the cart around. Helma stood watching him till he disappeared among the box trees, and before following her into the house we too will say farewell to Indian Jack, for he appears in this story no more. E'er the Murray had reached its height that winter he had left Narratoot forever, and his fortunes in other lands do not interest us.

As for poor, empty-headed Sue, like the proverbial person who fell between two stools, she found herself when the budding spring time came, forsaken by both lovers—the Commercial Traveller having proved faithless, like others of his kind. She mourned for him bitterly, for her heart was set on this brilliant match, but in the end she consoled herself with a black and grimy engine driver, whose appearance was the reverse of stylish; his one idea of full dress was a clean shirt, and he was never known to put a coat on except when it rained!"

But to return to Helma.

"A letter for you, mother," she said on entering. Mrs. Fourfields looked up eagerly, for she still looked for a letter from the absent husband. But the poor lady's expectations were once more doomed to disappointment, for the communication was from a lady in the city, the principal of a select boarding school for young ladies, where Helma had at one time taken a few music lessons and with whom her mother still occasionally exchanged letters.

This epistle was fated to bring about a considerable change in the lives of mother and daughter, for it contained a business

proposal from Miss Passy, which may be best explained in the lady's own words.

"Dear Mrs. Fourfields," she wrote. "You will be pleased to hear that we have of late been enlarging our premises. We are making a number of alterations, and I may say improvements in our establishment, which will make it advisable for us to increase the number of our staff. This brings me to the proposal I desire to make to you.

"I infer from your last letter, in which you speak of your daughter being busy with work away from home, that your circumstances are still not what you could wish nor, if you will permit me to remark, what you have a right to expect. Therefore, the plan I am about to propose may have advantages for you. It is this:—

"Will you undertake the housekeeping department of our establishment—the entire commissariat, as one might say—and so relieve my mind, burdened with weighty educational matters, of all care in that direction? If in addition to this your daughter Helma will agree to teach some of the youngest pupils, and to undertake a few other trifling duties, commonly performed by pupil teachers, I have the following advantages to offer you:

"First, a comfortable home, including a bedroom, which you and your daughter would share together, and the use of the Refectory as a sitting-room, when required. Second, a small salary—the amount to be settled at a future date. Third, for Helma, music, singing and language lessons from our best professors, which you will admit, is a really liberal offer.

"Hoping to receive a favorable reply soon, believe me, dear Mrs. Fourfields,

"Your sincere friend and well-wisher,

"AMELIA PASSY."

"Well-wisher, indeed," cried Helma, when her mother, after reading the letter, handed it to her for perusal. "I call it an impertinence for her to make such a proposal at all."

"Scarcely that," said her mother, smiling, "but it hardly strikes me as being such a liberal offer as Miss Passy seems to imagine it." "Nevertheless," she continued, thoughtfully, "it may be the best thing for us to accept it."

"Don't, mother, don't do it," cried Helma again, vehemently. "Let us stay here and be independent. You a housekeeper, mother—and at Miss Passy's beck and call. I could not bear it! You know how mean

she is, mother, and patronizing to those she considers beneath her!"

"All work that is honest is honorable, Helma. You know we came to that conclusion long ago. And I should certainly not consider myself beneath Miss Passy," and the little lady drew herself up proudly.

"But Miss Passy would! We are so happy and comfortable here, mother. Why make any change?"

"You know we must soon move whether we want to or not, Helma. The river will drive us out. It has half covered your fowl yard already, and in another six or eight weeks, when the snow water comes, it will be at the back door, if not in the house."

"Perhaps, mother, but there will be time enough to think of that when it does come."

"No, then it will be too late, my child. Besides, there is no 'perhaps' about it. The water is already in the upper river and it is still rising. The house agent spoke to me about it yesterday and warned me that we should have to move. I forgot to tell you that he was here while you were out."

Helma looked out over the river and sighed vexedly. It did not suit her at all that they should have to leave their little nest. The place was connected with Valtin, and it was there that he would come to look for her when he returned from the west.

"Why leave Narratoon?" she asked at length. "There are other houses to be had above the water level.

"Listen, Helma dear," her mother said gently. "It would be a great advantage to you to have the lessons Miss Passy speaks of. Your education has been plain and practical, good as far as it goes—but you know, Helma dear, you lack accomplishments."

Helma, suddenly overcome with a sense of her deficiencies, began to weaken in her opposition to the plan.

"I should like to sing; I should love to paint!" she faltered, looking with hesitating eagerness at her mother.

It occurred to her how much more worthy to be Valtin's wife she would be if she came to him adorned with accomplishments, highly educated, cultured. Perhaps even his scornful mother might be propitiated by these advantages.

A little more consideration led to Miss Passy's not too generous offer being accepted. Letters were exchanged, terms were finally settled, and a few weeks later mother and daughter left behind them the little cottage

where they had lived happily in modest independence for nine months.

It was a sad leave-taking for Helma. Never had the river looked more beautiful than when from the deck of the river boat she looked at the cottage for the last time across a sweeping reach of water that nearly touched the little porch. But she could see nothing through her veil of tears, and her heart was far too heavy to take pleasure in the opaline tints the setting sun was casting over acres of flood waters which spread over the flats and wound in and out among the trees.

Valtin had not written! Not a line to tell of his safe arrival. But that he had arrived in safety she knew from the gossip of the town. Not a line to assure her he still thought of her. Could she trust him? Could she still believe in his love she asked her heart. And the answer was "Yes, yes—a thousand times yes! There must be a reason for this silence. It would all be explained! But oh, how she grieved, and how bitter was the parting from their little home on the river, where everything spoke to her of Valtin and those brief, happy summer days!

TO BE CONTINUED

New Fruits

By Mr. W. Macoun, Dominion Horticulturist, Ottawa, Ontario

WHILE the fruit grower, fruit buyer, fruit shipper, and nurseryman all agree that too many varieties of fruits are being grown in Canada they also agree that all the varieties which are grown have, each of them, some decided faults. It will also be admitted, we think that the fruit growers in some parts of Canada have not as good a choice of varieties as those in the more favored districts where a much larger proportion of the good varieties offered for sale do well. These facts being known, the desirability of having new fruits which will have a larger proportion of good characteristics than those at present on the market must be apparent to all. Furthermore, those who live in the parts of Canada where climatic conditions enable them to grow fruits to better advantage than others must see the desirability of obtaining varieties which will be suited to the severer climatic conditions.

The fact that our best varieties of apples such as, for instance, the Northern Spy, Esopus Spitzenburg, Tompkins, King, Grimes, Baldwin, Greening, Jonathan, and Newtown Pippin were nearly all originated over one hundred years ago, and some of them considerably over one hundred years ago, is no proof that newer and better varieties cannot be obtained. Those mentioned, and many more like them, were chance seedlings selected here and there from the many thousand seedlings scattered over the eastern portion

of the United States. They were selected because they were fine apples and did well. When, however, we come to try these varieties in climates considerably more severe than those in which the original trees lived we find that they will not succeed. Have the people in these colder districts been content to not grow apples because these fine sorts will not grow? NO: They looked at first to a country with a cold climate for their fruit and we have the Yellow Transparent, Red Astrachan, Duchess, Alexander and the Montreal Strawberry and Peach of Montreal—both evidently of Russian origin of parentage and many others. That old variety, the Fameuse, which no doubt originated in the province of Quebec, is, we believe, of Russian extraction; the Anis apple, an old Russian variety, grown at the present time having many of the characteristics of the Fameuse. In Minnesota and Wisconsin where they also had to depend on these Russian varieties, we find springing from the Russians the Wealthy (said to be from Siberian crab seed), Wolf River, and McMahan, Seedlings of Alexander, all extremely useful apples both where they originated and in eastern Ontario, the province of Quebec, and New Brunswick where the climate is somewhat similar. From the Fameuse has sprung in eastern Ontario, Quebec, the McIntosh, St. Lawrence, Scarlet Pippin, Canada Baldwin, Langford Beauty and Rufus. In the province of New Brunswick there are many

apples originated in the province. Two of the most noted are the New Brunswicker and Crimson Beauty. The Dudley apple, which is also largely grown in the province, originated in Maine near the New Brunswick line and is said to have been grown from seed of the New Brunswicker.

Prince Edward Island can grow some of the best apples of the warmer districts and also grows to advantage the Russian, and apples of Canadian origin. Few new sorts of merit have originated there yet.

In the Prairie Provinces they are growing to a limited extent the Russian apples and the hybrids originated by Dr. Wm. Saunders between the Russian apples and the Wild Siberian Crab, *Pyrus baccata*, the hardiest apple known.

The same need for new varieties has not been apparent in the warmer parts of Ontario, the Annapolis Valley of Nova Scotia, and in the more favoured parts of British Columbia as in those parts of Canada just referred to, hence local seedlings have not come to the front, but we know there are many fine Canadian seedlings in existence today, some of which might prove better than the named varieties at present grown. In the past it took a long time before the true worth of a new variety was recognized. The original McIntosh tree was planted in 1797, but it is only within the last thirty or forty years that much has been heard of it, and only within the last ten that the public has begun to know it.

The apple has been used in this paper as an example of how new varieties are obtained when there is a recognized necessity. Some of the other fruits might be dealt with in somewhat the same way, but in a short paper it is not possible to do this.

Practically all the varieties of apples which have been mentioned are of chance origin. This is not because the best way to get new sorts is by chance, but because little effort had been made to originate new varieties with a definite purpose until comparatively recent years. In Canada the efforts of such men as Wm. Saunders, Charles Arnold, Francis Peabody Sharp, P. C. Dempsey, W. H. Mills, Wm. Haskins, James Dougall and John Craig in originating new varieties of fruits resulted in their obtaining some very good sorts, but unfortunately none of these men was able to devote the time to this work that its importance warrants.

Within quite recent years the breeding of new fruits has been carried on quite exten-

sively by a large proportion of the fifty or more Experiment Stations in the United States. Two States which are breeding fruits on a large scale are South Dakota and Minnesota. From the South Dakota Experiment Station a number of new fruits have already been sent out and the Minnesota State Breeding Station, though organized but a few years ago, has originated some good things already. The New York Experiment Station has already begun to distribute new fruits, some apples, raspberries, and strawberries having been already sent out.

Of Luther Burbank's work we hear a great deal, but very few of his new fruits have been found valuable in Canada. Chas. Patten, of Crescent City, Iowa, is a veteran hybridist who has originated a large number of new fruits. His Patten Greening apples is very hardy and compares favourably in this respect with the hardiest of the Russians. Stark Bros., Nurserymen, of Louisiana, Mo., have introduced a great many apples in recent years, but most of these have been of inferior quality. The Delicious apple, one of their introductions, is an apple of good quality and is now being planted to some extent in British Columbia. While an apple of good quality, it is inclined to grow rather unshapely under some conditions. The King David, another of Stark's introductions, is of remarkably deep colour and attracts much attention at exhibitions, but so far has not shown itself superior to Jonathan.

There is no doubt that there are many fine seedling fruits of Canadian origin which are not yet known. It has been our endeavor at the Central Experimental Farm to bring together there all the best of these Canadian fruits which come under our notice, and now there are upwards of 100 of these there some of which are very promising. A better plan, however, is to test the promising fruits originated in any province, in the province or part of the province in which they originated, and as Experimental Stations become available this being done. Some fruits are much more suitable for certain climates than others.

I should like briefly to state what the Dominion Government has done, and is doing, to originate new fruits.

The work of Dr. Wm. Saunders, assisted by Dr. Chas. E. Saunders, in crossing the *Pyrus baccata* or Wild Siberian Crab apple with the varieties of apples in commerce is well known. His object was to obtain hardy varieties for the Prairie Provinces. About 800 trees were grown of the first crosses, and

some good varieties with fruit as large, or larger than the best named crab apples was obtained. These have been thoroughly tested on the prairies and are now producing fruit there in a number of places. In 1910 the variety Robin produced fruit at the Dominion Sub-Station at Fort Vermilion, Peace River, latitude 58 degrees, and we have a report that the Charles apple fruited at Lesser Slave Lake in 1911. The best of these crosses were again crossed with the large apples, and more than 400 trees were growing in 1911 at Ottawa. A number of these have fruited and while the majority bear little, if any, larger fruit than the first cross some are as much as two and a quarter inches in diameter. These will be tested in the West.

Another way in which we hope to obtain hardy apples for the prairies is by growing seedlings of the hardiest Russian apples. These will be planted in nursery rows on the Branch Farms and those which prove hardy after several seasons will be removed to permanent positions. In this way a very large number can be tested on a comparatively small area. About 17,000 yearlings are available for plantings on the Branch Farms this year, and there will be a much larger number next year.

Work in raising seedling apples was begun by Mr. John Craig, Horticulturist at the Central Experimental Farm, Ottawa, in 1890, when 3,000 seedling apple trees were planted out at Ottawa. These were raised from seed imported from North of Riga, in Russia. Most of the trees proved very hardy and some of the most promising are being tested on the Branch Experimental Farms. The fruit of these was of good size, but few of those which fruited are good enough to grow where the better commercial apples succeed.

In the Horticultural Division at Ottawa we have fruited 997, or practically 1,000 seedlings and cross-bred varieties of our own production during the past eight years. Most of these are seedlings of such apples as McIntosh, St. Lawrence, Fameuse, Wealthy, Shiasawsee, Swayzie, Scott Winter, Salome, Lawver, Gano, Northern Spy, Winter St. Lawrence, and American Golden Russet, and it is planned to have a large number of new trees old enough to fruit each year. Of these which have fruited about 80 per cent. have been of marketable size and only 5 per cent. were small or crab-like. Over 200 have been considered so promising that they are being propagated for further test, and some

60 of the best have been named. The McIntosh, Northern Spy, Wealthy, and Langford Beauty have given the best seedlings. These named sorts are being propagated and sent to the Branch Farms, other Institutions and private persons for further test. It is not our desire to boom these varieties, but to let time and the experience of a number of persons show whether these are better for certain districts than other sorts on the market.

Following are some of the names which have been given to the more promising varieties:

McIntosh Seedlings—Lobo, Melba, Caruso, Caruso, Nemo, Joyce, Brock, Garnet and Service.

Northern Spy Seedlings—Rocket, Thurso, Rosalie, Glenton, Bingo, Nestor, Niobe, Tasty, Donald, Elmer, Sandow.

Wealthy Seedlings—Mendel, Luke, Galletta, Pinto, Medford, Battle, Melvin, Crusoe.

Langford Beauty Seedlings—Kim, Ripon, Horace, Kildare, Gerald, Cora, Sonora.

I might go on enumerating the names of seedlings of other varieties but these will be found with descriptions of the fruit in the Annual Reports of the Dominion Experimental Farms.

One of the most promising of the cross-bred apples is the Holz, a cross made by the speaker between Lawver and McIntosh.

This will give some idea of the kind of work being done with apples. Some work is also being done with other fruits, particularly the native plums for which we believe there is a great field of usefulness in Canada for those parts where the European and Japanese plums will not succeed.

Seedling strawberries, raspberries and gooseberries are being grown on a limited scale. Some very fine varieties of black currants and raspberries were originated by Dr. Wm. Saunders. The black currants have recently been offered for sale by at least one nurseryman. Some of the best of these are Kerry, Eclipse, Magnus, Clipper, Climax and Eagle, and the Success is the best early black currant we have tested. The Brighton and Count are two early raspberries, originated by Dr. Saunders, which are very promising.

While plant breeding has been one of the important lines of horticultural work at the Central Experimental Farm, there have been so many experiments in progress that it has been impossible to give it the attention which its importance deserves.

Of the newer fruits offered for sale by nurserymen the number that are really superior to the other sorts are few.

Among strawberries we have not found any of the new varieties of the past five years equal to those originated before. A new type of autumn bearing strawberries originated by Mr. H. Rockhill, Conrad, Iowa, are producing more late fruit than any of those introduced before.

At the Horticultural Experiment Station, Jordan Harbor, several thousands of new varieties of strawberries have been originated by Mr. A. Logsdail, by cross-breeding some of which are very fine.

Among raspberries, the Herbert, originated by Mr. R. B. Whyte, Ottawa, is certainly one of the best introductions of any kind of fruit in recent years.

The Sunbeam raspberry, originated by Prof. Hansen, of the South Dakota Experiment Station, is proving a valuable acquisition for the Prairie Provinces on account of its extreme hardiness. The King raspberry is also one of the best of the newer raspberries and is particularly useful in the Prairie Provinces.

Boskoop Giant is a fine black currant of comparatively recent introduction.

The Himalaya blackberry is a new fruit which has been much advertised. It is an Asiatic form of the European bramble. It is more like a dewberry than a blackberry. The fruit is of medium size, black and of good quality, but too soft for distant shipment. It is productive on the west coast, but is too tender for eastern Canada.

Among grapes, no new varieties are being offered for sale which seem to be likely to take the place of those already established, although such sorts as Early Daisy, and Manito are useful additions to those which ripen in the colder sections as they are extremely early.

What will, we believe, be a very useful fruit in the colder parts of Canada is the Downy-leaved Cherry-Prunus tomentosa a native of North China, Manchuria, and Japan. This is a bush growing about six feet high and bearing roundish or globular, slightly heart-shaped, bright red fruit about half an inch in diameter. It is subacid with a pleasant flavour. So far no grafted varieties are available. It varies considerably when grown from seed. This cherry has done well at Ottawa and has fruited in Manitoba.

Few of the newer plums are being found desirable for planting in the best plum dis-

tricts. The Climax, Shiro, America, and Golden are four of Burbank's varieties which are worthy of more extended testing.

Some of Hansen's new hybrids are proving useful for the colder districts.

The Omaha is one of the best of the newer plums for the districts where the American sorts are mainly grown. It is a cross between a Japanese variety and an American and was originated by the late Theodore Williams, of Nebraska.

The best of the newer peaches for Canadian conditions is probably the Oceana of the Crawford type.

No new varieties of pears of great promise, that we know of, are being offered for sale in America.

Among the newer apples not already mentioned the Dudley, Rochelle, Milwaukee, and Langford Beauty are desirable sorts for the colder parts of Ontario, Quebec and the Maritime Provinces.

Winter Banana is doing well in the Maritime Provinces and in parts of British Columbia. It must be handled carefully as it shows bruises readily. The Delicious apple is fruiting in British Columbia and in Nova Scotia, both in the colder and milder parts, but the fruit is not very symmetrical, in the East especially and it is doubtful if it will become a commercial variety except in restricted districts. At Ottawa it has not yet fruited, the tree killing back at first but is now apparently hardy. The Lowland Raspberry is an early summer Russian apple of handsome appearance and good quality, but bruises very easily.

Other new fruits might be mentioned, but the time is limited.

In view of the large number of new fruits which are sure to be introduced within the next few years, and the necessity of having as few varieties as possible for commercial purposes in each district, it seems to me very important that some means should be devised to encourage growers to plant but a few sorts, and we know of no better way to bring this about than by the co-operative buying of nursery stock, so that even if the total number of varieties grown in Canada is large, the number in each district will be few.

Said the bride, "Here's my first batch of biscuit,

Just wait, from the oven I'll whisquit."

How the poor woman cried

When her husband replied,

"Let it burn! I don't think I can riscuit."

Co-Operative Irrigation in B. C.

By A. E. ASHCROFT, C. E.

CO-OPERATION may be defined to be working in unison of two or more independent units. Joint stock companies are formed by the combination of a number of units of capital under one management. An army is a combination of individuals subject to one controlling mind.

Commercial unions for the marketing of produce, or the purchasing of supplies are successful only in so far as the controlling management acts with the whole combined strength of the total membership. To obtain the benefits of combination the independent units part with their independence, and the basis or organization is discipline.

A good example of co-operative irrigation is to be found in the works of the early Mormon settlers of Utah. The Mormon church was able to discipline the people and direct their work to the common good. Their irrigation works and practice are largely responsible for the wonderful prosperity and growth of their settlements.

In our own province the municipalities of Summerland and Penticton have taken over the irrigation in their districts as a municipal enterprise. This was decidedly a step in the right direction, but the machinery of government in a municipality is not quite suitable for the management of irrigation systems and there are other serious objections to that form of public ownership.

The development of irrigation in its present form is of quite recent date. Ten years ago there were no irrigation companies incorporated; today there are fifty. The change has come about mainly from the development of the fruit industry and the demonstration of the fact that ten acres of land in the irrigated districts yield as good returns as one hundred and sixty acres of land in the prairie provinces. The individual owner irrigating his grain or alfalfa from his own ditch is passing away and his place is being taken by the owners of five and ten acre tracts under agreement with some irrigation company, and absolutely dependent on the successful operation of a large system over which they have no control.

In many cases the irrigation companies were the owners of the lands under their sys-

tems, and having received back the cost of the works in the enhanced value, the lands were sold, for the actual cultivators cannot be depended upon to renew and maintain the works in perpetuity. The companies may go out of existence, or get into difficulties and pass into a receiver's hands and cease operating. This is a very real and serious danger confronting many fruit growers in this province, and the object of this paper is to outline a scheme, which if adopted would remove the danger entirely and would result in cheaper water and better service to irrigators.

The scheme put forward as a solution of the problem is as follows: Under necessary legislation, power would be given to certain localities to organize irrigation districts. Upon petitions being received by the lands department, water branch, by (a) one half of the owners (that is one half of the assessed value) in the proposed district, or (b) by the owners of any irrigated system covering more than 500 acres the chief water commissioner would prepare a plan outlining the boundaries of the proposed district and would cause a ballot to be taken of the owners of the land within these boundaries. Three-fifths of the owners, counting the assessed values, would carry the question. If affirmatively, the district would be gazetted, and by that act all ownership of works, water licenses and records, and privileges relating to irrigation would pass and be vested in the new district. All claims for compensation to be sent into the water commissioner within three months of the creation of the district, and a board of assessors, three in number, would be appointed by the Minister of Lands, to hear and determine the claims. This board would be composed of men competent to judge on questions of law, engineering, and agricultural and horticultural practice and would hear the evidence and determine the amount of compensation by the actual monetary loss, capitalized, is an annual one, sustained by the claimant.

The district would be governed by a board of directors, seven in number, and constituted as follows: four members to be elected by the property owners in the district

of whom one retires annually in rotation, the first retiring member to be decided by lot. The chief water commissioner and the water commissioner for the district to be ex-officio members of the board and the seventh member to be an engineer appointed by the Minister of Lands. This official, as well as the district water commissioner, could serve in two or more irrigation district boards. The retiring elective member would be eligible for re-election. The duties of the board would be to take over the management and control of all irrigation works in the district, issue debentures to the amount of the cost of acquiring the works and the compensation to be paid as desired by the board of assessors, and to levy a rate on all real property in the district sufficient to meet interest and sinking fund. It is proposed that these bonds should be for forty years, and that the provincial government should either guarantee them or lend the money from the treasury. The board would appoint all necessary officials to operate and maintain the system, and at the beginning of each year make a budget of estimated revenue and expense, and fix the charge to be paid for the use of water at a rate of sufficient to cover the cost of operating and maintaining the works.

The boundaries of irrigation districts would be fixed, having regard to the source or sources that the water was taken from and the lands that the existing works covered, or if extended, could be conveniently made to cover. No work involving the expenditure of more than \$1,000 to be undertaken by the board, without the plans for same being first approved by the chief water commissioner. The board would meet once each month and would cause minutes of their proceedings to be kept, and a copy would be sent to the office of the chief water commissioner. As this officer could not attend the meeting of the board, in his absence the district commissioner would take the chair, and in his absence those present would elect a chairman. All the accounts of the district to be audited annually by a government auditor.

The advantage of a system as outlined above over municipality owned irrigation works may be set out thus: (1) boundaries conforming to the irrigable area, (2) Continuity of policy assured by board not being annually elected, (3) government control of expenditure, ensuring uniformity of practice and accounting, and standardization of construction.

Over the present system of ownership and control by companies the advantages are: (1) absolute insurance of perpetuity, (2) cost of water reduced, or better service installed, (3) majority of board being actual owners of land and users of water, their management would be in the interest of users.

STORAGE RESERVOIRS.

In many parts of the irrigated districts of the province large storage reservoirs are essential features of the systems. In some cases one storage reservoir, or one series of reservoirs would serve two or more irrigation systems. If these were organized into irrigation districts, joint action could be taken, and the water branch of the lands department would be in close touch with the needs of all the districts, and would be in a position to carry out the work to the best advantage. I would go further and say that in this matter the provincial government might well be asked to bear a large share of the cost of storage reservoirs where the districts benefitted are organized.

FINANCIAL.

A brief examination of the financial aspect might be of interest, though each case will show a different budget. The capital cost of the various systems at present constructed varies from \$20 to \$60 per acre. The cost of operating and maintaining from 50 cents to \$1.50 per annum. The first or capital charge would in some cases be largely reduced, as the works would be acquired by the districts below the actual cost.

The alternative method of applying to the department to take the initial steps for the formation of a new district was given above as (b) "by the owners of any irrigation system covering 500 acres or more etc." In this case the owner or company would be required to set the price which they would be willing to take for their undertaking. If, in the opinion of the minister this price was a reasonable one, the department would proceed with the organization, and the amount to be paid in compensation to the company or owner of the works would in no case be higher than the amount set forth in the petition. The capital cost would be met by a bond issue on all the real property in the district at a low rate of interest redeemable in forty years. The annual sum necessary to cover interest and sinking fund would be raised by a tax on the assessed value of the real property, and if there were

a town or village in the district, the per acre cost for agricultural land would be less and residential or business lots in the town would be more than the average.

The money required each year for the operating and maintenance of the works would be met by a charge for water which would be fixed by the board at the beginning of the season. A charge basis on the quantity of water used in recommended.

It will thus be seen that the ultimate cost of irrigation to the cultivator will be largely reduced, and will be made as nearly uniform throughout the province as physical conditions will permit. If the movement extends, in a few years the water department will have a large staff of highly trained men to put at the disposal of the various boards and the duty of water will be much increased. The feature I wish to emphasize is, that under such a scheme the business of intensive farming will be put on a permanent basis. The very life of the industry depends on a sure and certain supply of water each year. No company, however strong can be as permanent as such an organization of the growers themselves.

SEEPAGE AND DRAINAGE.

Nearly all the agreements with existing companies contain clauses indemnifying the companies from actions for damages sustained by reason of seepage on the lands below the canals. This is absolutely necessary and the board would have to obtain the same protection. But it is an absolute certainty that in nearly every district, sooner or later, extensive drainage systems will be required. When this becomes necessary the organization of the district will be able to handle the question.

It may be objected that the boundaries of these districts may include parts of already organized municipalities and confusion may arise over the taxing power given to the board. The manner is that the same thing already exists in many school districts, and in other countries, New Zealand, for instance, Harbor districts are created covering cities, rural municipalities and unorganized districts in which the lands are taxed for the purpose of improving certain harbors to which the lands are tributary.

I make no apology for the length of this paper as the subject is a highly complicated one, and in my opinion, one of vital importance to the members of this association.

PROF. JAMES W. ROBERTSON.

Before the Dominion Fruit Conference, Ottawa

The development of fruit growing in localities is due to the initiative, enterprise and ability of men rather than to superior natural advantages. That applies also to the improvement of particular orchards and fruit farms. Competent management is the main thing. For convenience of explanation, one observes three stages in the process of successful management, viz., observing carefully, thinking clearly, and putting the results of these together with the least possible waste. The fruit grower first applies himself to the management of land, plants, men and women and their doings. Land, so far as the fruit grower has to do with it, is made up of the broken down remains of rocks, plants and animals, together with water and living germs in the soil. These furnish the root-hold and food supply for trees. One acre of apple trees drinks in a year about 1,000 tons of water; one acre of grass takes in about 600 tons of water. Clean cultivation in orchards until the fruit is nearly full-grown is advantageous from which stage onward the growth of the covering crop will draw on the water supply in such a manner as to hasten the ripening of the fruit. The covering crop also puts orchard land in the best condition for giving the fruit trees a good start in the Spring. Trees are to be considered as individuals, with characteristics of their own in ability, capacity and their quality of life. The fruit grower's part is to give the inherited power of the tree opportunities of access to plant-food, and protection against attacks of diseases and insects.

COST OF SPRAYING.

The cost of spraying four times during the season is about 20 cents per tree. That treatment increases the value of the fruit on the average not less than \$1.50 per tree. Experiments have revealed that unsprayed apple trees yield from 10 to 50 per cent. of No. 1 quality fruit, according to the season, whereas sprayed apple trees yield from 80 to 90 per cent of No. 1 quality. An instance was mentioned in which Mr. Medcalf, District Representative at Collingwood, Ont., took charge of a small orchard. It had never before yielded more than \$50 per annum. He spent \$50 on the orchard, gave it good management, and within a year, the fruit brought to the owner \$250. Another in-

stance was that of Mr. Shearer, of Simcoe, Ont., whose two acres of orchard up to 1906 did not yield more than \$75 in any one year. He joined the local Co-operative Fruit Association. With the same number of trees, same area of land, and hardly any more expenditure of labor or money, he so improved his management that in 1910 the orchard brought him in \$350, and in 1911, \$432.20.

In the matter of distribution of fruit, Dr. Robertson stated that there was a great increase in the use of boxes as package for apples; that the packing was done more skillfully, carefully and honestly. During last year there were practically no complaints from Great Britain regarding the honesty of the packing of the Canadian apples. Great improvement had been made in the provision for safe transportation; improvements were greater on board the steamships than on the railways. There was still room for improvement in both.

Towards increasing the consumption of fruit, fruit growers are able to keep their present customers by pleasing them with fine qualities, in good condition, having an attractive appearance. They could obtain new customers, and increase the demand for old ones, by the same means. Co-operative associations for packing and shipping fruit assist in providing a regular supply of fruit to the several markets. A fruit propaganda, looking towards increasing the consumption, would be advantageous, that might be conducted by means of exhibitions, press articles and judicious advertising. A central organization directing its efforts towards these ends would be beneficial to the fruit-growing interests of the whole Dominion.

Further improvements of production, distribution and consumption, would be through education, co-operation and legislation. The enlargement of fruit growing as a remunerative and satisfying occupation brings benefits to individuals and increasing prosperity to the whole community. As fruit growers and fruit handlers all see their interests as separate, as citizens they recognize these interests in relation to the welfare of the country as a whole; and as trustees, for the land, the status of their occupation and opportunities for their children, they discern values which are worth while gaining for themselves and conserving for posterity.

THE FOREST.

The forest breathes a life widely differing from the life of open lands. The huge trees of the primeval wood have dwelt for centuries upon the same spot. Through the centuries they grow in them a shy self-consciousness and a kinship with all the environment.

The life of a great tree is a worthy object of study. The consciousness of the being is nebulous, fantastic and timid. Many of the old fairy-tales tell of talking trees and describe their feelings as if they were men.

One might imagine the tree would be conscious of its age and would have some memory of the generations of animals and plants that have lived and died beneath its spreading arms.

In calm it would share with the other plants the gentle quickening of the morning sunlight, the scorching, shrivelling heat of mid-day and the refreshing dews of evening—all this a dainty routine, tempting to confidence in Nature's order. Then, comes the storm, the tornado and the testing of the strength of trunk and branch with groaning of over-straining woody limbs. In peaceful hours are gentle whisperings of leaves and rubbings of twigs to call from tree to tree. In storms all the forest liegemen stand together resisting the wind-pressures of the howling air-giants. And the brother trees call to each other in a confidence of sympathy. Loftiest are the pines whose plume-like heads—the forest viewed in peace-time from some crag—appear above the tops of hemlocks or of tamaracks that fill the middle-ranks. And, down below, the incense-breathing balsams stand to catch and turn away the darting air-fiends of the lower planes. Now stands the forest all as one; each tree-man holds for all in one defense, all stand for each. A mighty forest unity is felt—a nation of woodland group-souls sighs as one.

SECRET.

The counsel demanded to know how many secret orders the witness belonged to, whereupon the witness objected and appealed to the judge.

"I see no harm in the question," said he: "you may answer."

"Well I belong to three."

"What are they?"

"The Knights of Pythias—the Odd Fellows and the Gas company."

The Attitude of the Railroads Toward Forest Fires

BY E. A. STERLING

Forester, Pennsylvania Railroad Company, at the Forestry Convention, Ottawa, February 7-8, 1912

“RAILROADS” and “unknown origin” are the two headings under which the causes of a large majority of our forest fires are listed. Even after allowing for inaccuracies in the records, the number of fires resulting from railroad locomotives is unquestionably large. The attitude of the railroads toward the forest fire evil, and the possibilities of reducing this particular source of danger, are therefore questions of interest and importance.

While the railroads for many years have perhaps shown too little interest in forest protection, it must be remembered that indifference has characterized most of the other interests, from the Government down to the smallest woodlot owner. The railroads could hardly be expected to worry about forest fires when the states through which they ran had neither laws nor organization to prevent or fight fires. So many of the developments tending toward the solution of forest problems have not taken place until recently, that criticism of any particular interest reflects discredit on all. Practically all of the definite accomplishments in forestry, both in Canada and the United States, have taken place in the last ten years, and the greatest achievements are less than five years old.

Under the latter, the beginning of effective fire protection stands out prominently. Our forests are still far from safe, but Federal, state, and private activity has paved the way, and another decade should remove the fire menace from our remaining forests. In this work, which must be co-operative to succeed, the railroads are doing their full share.

Certain basic causes must underlie any given set of conditions. If the railroads have been the too frequent cause of forest fires, there are various reasons why this has been true. First of all, no spark arresters have been designed which will eliminate flying sparks under all conditions, and at the

same time give the locomotive free draft. While the various devices in general use greatly reduce the danger from this source, the fact must be accepted that there are certain mechanical difficulties which have not been entirely overcome.

If it is recognized that sparks capable of starting fire reach the ground, the next logical step would be the removal of inflammable material from the right-of-way. It is easy to advise this, or even to legislate to this end; but to the comparatively new roads which have pushed into the forest regions, the expense of a fire-proof right-of-way is a very serious consideration. Most of the main trunk lines now clear their rights-of-way twice a year, but this is by no means a guarantee against fires from locomotive sparks. The strip of property owned by the railroads is too narrow for a safe fire belt. Adjoining property offers quite as great a menace; so that, even if the railroads kept a right-of-way of fresh mineral soil, live sparks might easily start fires in the slashings and accumulated litter on adjoining property over which they have no control.

As one other consideration, it may be mentioned that for years the railroads shared in common with the public the attitude of calm indifference as to what happened to our forests. Corporations occasionally lead in developing public sentiment; more frequently they are guided by it. The man on the street even now is hardly awake to the importance of forest protection; yet, the railroads are taking the matter in hand with an energy in advance of public sentiment.

A fair analysis of the situation reveals several reasons why the railroads have been either the primary or the indirect cause of many forest fires. No reasons can be found, however, for the railroads deliberately permitting or desiring to start fires, although such is often the popular conception of the matter. From many standpoints the railroads are the heaviest losers when a forest

area burns. It takes away tonnage, both present and future; reduces summer tourist travel; and, unless the region is developed for agriculture, merely furnishes ground on which to run tracks between more productive points. Damage claims follow every fire, and alone are enough to bring about any protective measures within reason.

The past gives us a little of which to be proud, so it is best to forget, save as a lesson, the semi-annual pall of smoke which has marked our forest fire losses. If we date our history some two or three years back, we can find basis for a future of greater promise. In the States, no one factor in forest fire prevention can be mentioned without including others. The Forest Service set the pace in the systematized fire work on the National Forests; while the States, the timberland owners, through their forest protective associations, and the railroads followed. Today all are working together in closer co-operation than was ever believed possible, and the results from only two years of combined efforts are most encouraging.

To tell specifically what the railroads are doing would occupy too much time. Briefly the measures which are proving most effective are the removal of combustible material from the right-of-way, systematic reporting of all fires which start, and prompt action in extinguishing them, regular patrol during dry seasons, use of oil-burning engines in forest regions, wherever practicable, and the keeping of spark arresters and ash pans in good condition. The clearing of land adjacent to the right-of-way is a very important development, which is permitted in Massachusetts and required by New Jersey, the latter providing for a 200-foot strip between the outer rail and a ten-foot fire break. About 235 miles of such fire breaks have been constructed during the past two years, with the result that the number of fires has been very greatly decreased. Where the Northern Pacific and Great Northern Railroads traverse National Forest land, 200-foot strips are cleared and maintained under a co-operative agreement between the railroads and the Forest Service.

The systematic patrol of the railroads, particularly under the direction of the State forest officials, is proving a valuable fire preventive measure. Minnesota provides for this in the new forest law; New York has required the patrol of railroads in the Adirondack region; while the Maine Central

has provided a voluntary patrol. In the West, the Forest Service co-operated with the railroads in patrol work, most of the patrolmen being on the Government rolls, because of the protection afforded adjacent forest land.

The use of oil-burning engines is required by law in New York State from April to November on all roads traversing the Adirondack forests. This, however, puts a heavy burden on the railroads, and is hardly a fair or practical measure in regions remote from sources of crude oil supply. Two transcontinental roads, after extensive experiments, have voluntarily installed oil-burning engines on divisions traversing the National Forests.

The Pennsylvania and other roads operating in the more thickly populated Eastern states have to contend mainly with small fires started in woodlots, stubble fields, and second-growth woodlands. These fires rarely assume serious proportions, and are guarded against by the trackmen and other employees, all of whom are under definite instructions to report fires and promptly extinguish those which start. Only one fire was reported by the state fire wardens as having been caused by the Pennsylvania Railroad during 1911, and this, upon investigation, was found to have occurred beyond the possible range of live sparks.

A striking summary of the railroad forest fire problem and most excellent recommendations for fire control were passed as resolutions at the Forest Fire Conference in Portland, Oregon, in December, 1911. It would be impossible to do better than close by quoting these resolutions:

Whereas, The protection of the timber resources means: The stumpage value to the timber owner of approximately \$2.00 per M. feet B.M., employment and remuneration to the wage earner of approximately \$8.00, tonnage to the railroads both in supplies, equipment, and forest products approximately \$6.00-\$8.00 per thousand, benefits to the farmer and merchant through the use of supplies, an insurance of community prosperity and the general public welfare; and,

Whereas, It is recognized that the railroads operating in forested regions are a source of fire danger menacing the preservation of this resource for use; and,

Whereas, The danger from forest fires is common to all and co-operation is necessary

to meet this danger;

Now, therefore, *Be It Resolved*, That in order to secure the best results this co-operation by systematized along the following lines:

1. Clearing up rights of way of railroads of all combustible material on ground; not necessary to take down trees or take out stumps unless punky, rotten, or hollow.

2. Establishing efficient patrol of tracks during dry seasons, both night and day.

3. Increase efficiency of spark arresters and transforming all engines being operated through timbered districts to oil burners as far as practicable.

4. More strict enforcements of order that steam be turned on all ashes dumped from engines. Stringent enforcement of orders that no ash pans be dumped while train is in motion.

5. That orders be given expediting the furnishing of men from road gangs and section crews.

6. Reports of all fires by all train crews at first telegraph or telephone station.

7. Sharing expense of patrol by railroads.

8. That association, federal and state organizations furnish their regular employees within their respective territories to assist in fire patrol.

9. That authentic information of the condition of railroad rights of way, the methods used under different conditions, and of all fires originating on or adjacent to the right of way be obtained by federal, state, and private organizations in order to present definite data to effect improvement in methods.

10. That this situation be kept before the railroads, the organizations interested in fire protection, and the general public, in order to insure a practical working out of these recommendations.

Lady Adanac's Fireside Talks

WE will suppose that our city lot is 40 feet by 120 feet and that there is a space 30 feet by 30 feet available for the chicken house and run. How shall we set about installing our plant? Of course, a great deal depends on the amount of capital we can command to start with. To put up an open front house, even so small as 10 feet by 10 feet, would require about \$10.00 worth of rough lumber, and as it is essential to have the chickens securely yarded, the outlay for wire netting would be \$5.00 more.

I should advise keeping a rather heavy breed of fowls, such as the ever satisfactory Barred or Plymouth Rock, or the Rhode Island Reds. With the lighter kind there is constant trouble in keeping them within bounds. Leghorns, I verily believe, will fly over the highest fence ever made by man—and we must bear in mind the little vegetable garden our city lot should accommodate and plan nothing to its detriment. All four sides of the yards must be enclosed; the house will partially guard one of them and will save a little netting.

It is to be hoped that the labor of putting up house and yard will not have to be counted among the expenses, or the latter will be greatly increased. I think we may expect the Handy Man or Handy Boy about the house to attend to all that. So let us put down \$15.00 for materials and add to that \$15.00 for our stock—about a dozen pullets and one rooster—and we are ready to begin.

But, hold, supposing our city family has no \$30.00 available to put into the domestic chicken business. What then? Must they go without new-laid eggs on that account? Such a family would probably be the very one to particularly appreciate an additional 60 or 70 dozen eggs a year, at a cost for feed of less than the price of the 52 dozen calculated in the food supply for our Family of Five last month.

You will perhaps remember that the Family of Five on Five Dollars a week was allowed to spend thirty cents per week on eggs. That thirty cents would more than feed a dozen hens for a week, even at the high price of feed in Vancouver; and those hens, if they are the birds I take them for,

will produce at the lowest estimate 120 eggs each per annum, or an average of 23 and a fraction eggs a week. Considering the lowness of the estimate I think we may count on our hens converting that fraction of an egg into a whole one—and, therefore, we will assume that they will average at least two dozen eggs a week, at the same cost as one dozen of the very inferior kind bought at the store.

To return to our family without capital but anxious to produce eggs. I know of only one thing to do. Buy a setting of eggs—buy or borrow a sitting hen—and await results. Do it two or three times the first season, or until you have thirty-five or forty chicks. Allowing for ordinary “bad luck,” the survivors of these will probably number about twenty-five, and of these a dozen will be pullets—the future egg-layers of the family. The cockerels can either be sold or eaten when they are three or four months old.

And all this without capital you ask.

Alas, no. I must admit that some capital is necessary for even so small a venture. It costs something to buy the eggs for setting, even though you buy them from a neighbor and pay only market price. It costs something to feed twenty-five or more chickens for three months, and twelve pullets for another three or four months, or until they begin to lay. And in the end your flock must be housed and your yard fenced.

You may count on the price of feed per chick being five cents a month for the first three months (counting only the survivors), or say \$3.75, and the same amount ought to feed your flock of pullets up to the time they begin to lay, unless that time is unduly delayed. Thus they will have cost you in feed about \$7.50. To this add \$2.00 for four settings of eggs at 50 cents a setting (no fancy price, you see)—we are raising only “common garden” varieties at this price, but there is no reason why they should not be a strong, healthy strain; and from this sum total of \$9.50 deduct the value of 12 cockerels at 40 cents each, and you will find that your pullets have cost you \$4.70, approximately, and you have been obliged to wait patiently seven or eight months for your first home-made egg.

As for accommodation, empty cases from the grocers will furnish nests and brooders, and odds and ends of old lumber and shakes will build a shed if there is none available on the premises. Some shelter against rain is necessary from the first, during the day

as well as at night. For cold weather comfortable sleeping quarters can be made of extra large packing cases, stood on legs, each with a long perch, to accommodate six or more hens, and supplied with a drop curtain of old sacking, to let down on frosty nights. These boxes will stand under the shed, and the total cost of the makeshift quarters (which may, nevertheless, be perfectly comfortable and healthy), with wire netting for a yard, need not exceed five or six dollars.

What the family without capital has gained, therefore, is a more gradual expenditure which could be made out of weekly savings, and a reduction of the money required, from \$30.00 to roughly \$12.00 for stock and accommodation.

Yet there is another gain that should not be overlooked—that of the experience acquired while managing the sitting hens and raising the chickens. It will mean a good deal of work, but work of a pleasant and healthy kind, that takes and keeps you out of doors, clears the cobwebs out of your mind and puts you in a cheerful humor with yourself, your family and the world.

Behold us, then, equipped with a small poultry yard and house in the rear of our city lot, and with a dozen pullets just beginning to lay, and—shall we say—one rooster, not as a necessity, but as a cheerful and enlivening companion for the hens in their circumscribed quarters.

I have known roosters—particularly among the Plymouth Rocks, of so chivalrous a nature that it was a real pleasure to watch them with their flocks. One long-spurred old fellow—five years old at least, would never eat a bite himself until all his wives had come at his call and picked out the tid-bits. Sometimes they were greedy enough to leave him nothing, whereat he was manifestly disappointed, but bore them no ill-will and treated them just as generously next time. This same old fellow was always beautifully attentive to the hen with chickens, scratching for her and the family in a fatherly way and following them around with solicitude.

But this is sentiment and not practical chicken business, and I trust you will pardon the digression.

With our twelve pullets and a rooster (preferably an old bird and not related) comfortably settled, let us consider the care of them.

The essentials are a clean house, clean dirt (!) to scratch in, some grit, abundance of green stuff (which the garden should supply)

and a varied diet of grain and scraps, enough to satisfy them—and nothing over.

The open front house can have a burlap curtain to let down on extra cold nights,—as described for the packing case sleeping apartments. In the mild climate of the Pacific coast this is all that will be necessary, but in cold parts it should be possible to completely close the house and there should be windows to let in light and sunshine. There should also be liter on the floor in winter,—the deeper the better,—to furnish exercise and warmth to the hens when they have to be shut up.

Clean the house every day and it is only the work of a few minutes. If you let the dirt accumulate, it becomes a troublesome business that you are apt to keep putting off indefinitely. Every day,—unless the ground is frozen,—dig up at least a few square feet of the little yard, and as you do so, scatter wheat or oats, burying it, so that what the hens do not scratch up, will grow and give them sprouted grain later on.

Every kind of table scrap will be relished by your flock. Even potato peelings and vegetable scraps may be boiled, in winter, chopped, and if sloppy, mixed with bran or meal till dry and crumbly. Egg shells should be broken small and fed back again to their producers. Scraps of fat and grease will be relished by them, especially in winter. In fact the cost of feeding the hens may be materially reduced by using all sorts of by-products of the kitchen; only be sure you take pains to make the food appetizing; season with salt and a little pepper and feed everything *fresh*. Don't empty the contents of the slop bucket into the chicken yard every day or two,—a disgusting sour mess such as I have seen sometimes, colored and flavored with coffee grounds and tea leaves, with even the contents of the dust pan added, as a "thickener!" No wonder the chickens fed on such stuff huddle in corners and sulk, and show their disgust by refusing to lay an egg.

Remember, the chickens will relish anything that you would like yourself (with the exception of tea, coffee or heavy sweets)—and they will eat a great deal that you would reject of course. Use up every scrap that has nutriment in it, and you will find that very little wheat need be bought. However they should always have some grain given them at night; it will keep them warm and comfortable till morning.

A tomato can, with a small hole punched close to the edge, filled with water and inverted over an old pie plate, will make a

good drinking fountain. Wash it and change the water every day. A shallow box or a trough made by the Handy Boy will answer for the food or mash, and there should be a tin filled with charcoal and grit nailed to a post, at a convenient height for the hens to help themselves.

If you decide to raise your own stock, set your hens in April or May at the latest. The pullets should then be laying by the following January and you should be getting three dozen or more eggs a week in February and March. If you don't want to use so many, buy water glass and make a solution according to directions, in which to preserve them for use towards the end of the summer. By September there will be a marked decrease in the number of eggs,—until there comes a time when you will get only one or two a day,—and later still when there may not even be one for several weeks in succession. This is pretty sure to be at Christmas time, when eggs are at their very highest.

Of course it will be your ambition to have your hens laying when the price of eggs is sixty cents or more. I hope you will be the one woman in a thousand to accomplish this miracle,—and when I say "miracle," I don't mean something impossible, but only something wonderful.

And with it all, beside some work and worry, you will get a great deal of pleasure. Chickens are fascinating creatures to any one who loves live things. They have such pretty ways, and are so amusingly human. Greedy, selfish and stupid they are, and at times aggravating to a degree; yet they sometimes show gleams of surprising intelligence,—also a beguiling confidence in us as their benefactors, and a beautiful, motherly devotion to their families, which trait alone is sufficient to redeem their character and make us love them.

If you let the broody hens that are sure to "occur" (and will refuse to be put off)—if you let them have their way and sit on eggs, instead of empty nests or door knobs, you will have another interest and another pleasure in superintending the incubation and assisting in bringing up the family after it is hatched.

The old hen will not be any prouder than you if she succeeds in bringing out ten or twelve chicks,—and you will grieve a great deal more than she will over the one that the stray cat gets,—the other that the butcher's horse stepped on,—or yet another that is drowned in the water tin!

As a last word, let me say: dig over the yard and whitewash the house and nests at least once a year,—and renew your stock not less than *once in two years*.

In the end I think you will find that poultry keeping on a City Lot is a profitable as well as a pleasant enterprize, and you will not be sorry that you undertook it.

BIDDY'S MORNING CALL.

This has been a heavenly Spring,—but I say that every year when Nature, in this lovely Western Province, begins to waken from her brief winter sleep and to clothe herself in her new “robe de Printemps.” She shakes out from the skirts as she does it, such sweet invigorating odors and she charms the eye with such soft gleams of color as she arranges the trimmings; it is a delight to watch her.

I suppose Nature's fashions do not really change; her “Spring Opening” has been much the same for many thousand years. Her “*dernier cri*” of style was also her “*premier cri*” ages before we were here to be charmed by it's deceptive suggestion of novelty. Nevertheless her April Display of New Things makes me think of a vast Department store where we can wander for weeks and not see half the stock,—weeks, did I say?—when it takes a lifetime to explore one single corner of Nature's wonderful Emporium! And each year we see new things that, we could swear, were never there before.

I was musing in this manner as I stood by the open window, looking up and down the street. Our suburb is near enough the country to give a wide look-out over trees and mountains and water. It was all indescribably beautiful on this April morning, green grass and flowers in the foreground, and farther away shrubs and trees and a bright blue sky,—with snow-capped peaks giving grandeur to it all.

As I mused I looked out for Biddy. It was time for her to appear round the corner, and she has been very regular in her calls this last month.

The dear girl has caused me much uneasiness. My old light-hearted, audacious Biddy seems to have vanished and in her place comes a sad-eyed, gentle creature whom I could weep over for very pity at the contrast; or at times there comes a reckless, defiant, scornful Biddy, who rails at the world in general and herself in particular. And who distresses me more than the other.

And always this talk of joining a Sisterhood. I begin to think she will do it,—and it may not be such a mistake after all. The child seems utterly changed and her whole heart is evidently set on it——

To this foolish conclusion my thoughts had led me when Biddy herself appeared in the distance. Instantly my attention was arrested, for there was a man walking beside her. As they swung along together, the spring and joy of youth was in their step, and their tones and laughter, carried by the breeze, were in unison with the melody that Nature was singing. It did me good to hear Biddy's pretty, tinkling laugh once more. Of late she has laughed but seldom,—and then all the old bubbling mirthfulness was gone out of the sound.

Who was the young man, I wondered? He was a stranger to me,—a tall, straight young fellow, with a good, clean-cut, intelligent face; I could see that much as they approached. Could it be the young engineer my boys had told me about, who had come to live on our street? Yes,—it must be he—

By this time they were at our gate,—but Biddy showed no disposition to turn in as usual.

“Good morning, dear Lady,” she called out, and waved her hand to me.

“Won't you come in, Biddy?”

“Not this morning, thanks,—” she said, with her most bewitching smile. “Time and the B. C. Electric wait for no man, or even woman. I might miss my car.”

Then, after a moment's hesitation, she stopped opposite to where I was.

“Let me introduce Mr. Willis,—Lady, Your boys know him, and I met him long ago, at a dance—” Biddy gave me a look half guilty, half saucy,—and I knew it was her partner of the many dances.

As they moved on a moment later, she called back, with her old laughing impertinence—

“Now, Lady Adanac, don't stand by the open window in a draught. There's a chill in these Spring days,—and you know it will make your cold worse! “mimicking my admonition on the occasion of her last visit.

Ah well! It is good to see the dear child happy once more. The young man looks desirable too; but I shall sadly miss Biddy's Morning Call.

Thank you, *Portia*, for the interest you kindly express in *Fireside Talks* and for your timely remarks. After all there are not many

women to whom the subject of Household Management does not appeal, and it would, as you say, be interesting to know how others manage on incomes of \$100.00 or \$150.00.

What I called the Extreme of Economy, in our March number, namely a dollar a head per week, for food, with five in family (3 children) would represent, according to my idea, an income of \$75.00 a month, distributed somewhat as follows:

Clothes	\$15.00
Food	20.00
Rent	18.00
Light and fuel.....	10.00
Incidentals, (including car fares, amusements, Church, medicine, etc.)	12.00
Total.....	\$75.00

During the summer the savings effected in light and fuel could be spent to advantage in buying fruit and sugar, to put up jelly and preserves for the winter.

In order to insure proper attention all Correspondents should send their full name and proper address.

LUTHER BURBANK AND HIS SPINELESS CACTUS.

Having known Mr. Burbank for several years it fell to my lot to interview him in regard to his spineless cactus.

Upon arrival at Santa Rosa, I was at once ushered into his office, and was received most cordially.

After some conversation he proposed to conduct me through his cactus field. Near the barn lay a lot of cactus fruit and he at once proceeded to cut one open to give me a taste with the warning not to eat too much of this variety because he wanted to show me so many others.

The taste of this first one was peculiar, all that can be said is that it was characteristic of the cactus, for although they all have more or less sugar, this taste is common to all in different degrees. But one can well understand that these fruits are very valuable as a pleasant diet, more especially in case of a failure in other crops.

Some of the varieties grow so thickly together that it looks as if the plants could not be packed much tighter in a box and Mr. Burbank's estimate from weighing them is that some varieties produce on an average 2,000,000 lbs. of nutritious forage per acre, while others produce such a wealth of fruit as to make one realize that famine must be a

thing of the past wherever this new production is introduced. Personally I have seen a piece of his cactus suspended by a string inside a real estate brokers' office. It hung there two years without any water whatever and at the end of the two years produced a fruit.

Mr. Burbank showed me a plant consisting of probably five or six slabs larger than a good sized hand, which had hung in a tree upside down for six years. Several cuttings had been taken from it in that time, but Mr. Burbank declared that any portion of it will produce a vigorous plant, no matter how planted, upside down or merely thrown away.

Here in California, where it does not rain between April and November the ground becomes very dry. He showed me a cutting about the size of my hand which in a week's time had already struck root in this dry soil, and had to be pulled up. He declared that a cutting will live for at least two years in complete drought, and after it is rooted it will take ten years to kill it. The kinds he has found unsatisfactory have to be burned, for which he has a kind of furnace on the grounds.

It is impossible to do justice to the value of Mr. Burbank's productions, since they are so numerous and varied. All seem to have been touched with a magic wand.

Some years ago I grafted a seedling plum with a kind I wished to preserve. Two years later I obtained a graft of the Burbank plum. In one season this last outstripped that two years' growth by many inches. The potato which bears his name alone would have made him famous, but altogether he is rightfully the wizard of the vegetable kingdom.

P. VAN DER LINDEN.

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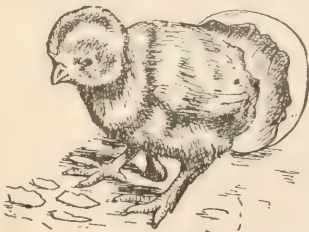
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Some of the most complimentary and encouraging letters received by the new Management have come from the Prairie Provinces, and among other communications welcomed was a personal letter (with subscription form and cheque) from "RALPH CONNOR."

The first numbers for 1912 contained Literary Articles on up-to-date, "live" questions, such as (1), EAST INDIAN IMMIGRATION; (2), THE JAPANESE; (3), The Re-Birth of China; also an illustrated article on Impression of the South Seas; and the first of a series of "Ministerial Minature—The Man and His Message." In addition there is an article by Dr. E. D. McLaren, on Vancouver, which appeals to "Old-Timers" and later arrivals alike, entitled:

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Premier McBride said in his New Year's review: "It is significant to note that yards are being established at Coquitlam which, it is reported, will rank—in extent of trackage and all modern railroading necessities—with any on the continent, and in provision of which an expenditure of millions is involved."

Vice-President Bury of the Canadian Pacific Railway says: "Work has begun at Coquitlam. * * * Rapid work on the terminals is imperative—and the work and development will be rapid."

Special Reservation

We have managed to reserve 100 residential lots for readers of the Fruit Magazine at the special opening price of \$250, on the special terms of \$25 down and \$10 a month.

Send no money. Tear out the coupon below. Fill it in and mail today. Read the literature we send you, read the opinions of prominent men published in the press, study the beautiful panoramic views, note the location of your lot on the plan—THEN, if you are fully decided that this is the greatest opportunity the Great West has ever offered, send in your order.

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The Okanagan Cannery

LIMITED

Capital, \$200,000 In 200,000 Shares of One Dollar Each

THIS Company is formed to preserve the fruit raised so abundantly in the Famous Okanagan Valley for market requirements. It is a well understood fact that a great field exists in this fertile valley for the judicious investment of capital, and in this development we wish to secure the financial co-operation of investors who wish to participate in a safe and profitable undertaking. Millions of dollars worth of canned peaches, apples, cherries, tomatoes, etc., are shipped into British Columbia and the Prairie Provinces annually. :-: :-: :-:

We are now offering for Subscription One Hundred Thousand (100,000) shares of the treasury stock of the Company at One Dollar (\$1.00) per share, twenty-five per cent (25%) on application, twenty-five per cent (25%) on allotment, balance thirty (30) and sixty (60) days in two equal payments, payable at the Commercial Trust & Loan Company, Ltd., Offices, Bank of Ottawa Building, Vancouver, British Columbia.

The prospects for the Okanagan Cannery, Limited, are excellent. Our object is to build and control a number of specially selected canning factories situated in different parts of the Okanagan Valley, each so located as to be in the best district for the choicest growth and cultivation of the special classes of fruits and vegetables which it is proposed to handle at the particular plant chosen and to be able to curtail to a minimum the overhead or office and general expenses, and to purchase all supplies on the most economical basis. The first cannery will be erected at Kelowna, the center of the fruit industry on Okanagan Lake. The site has already been purchased and a wharf two hundred and fifty feet long has been built and the foundation laid for the new buildings.

All applications for stock must be made to the undersigned, who will be glad to furnish all particulars upon request

The Okanagan Cannery, Limited

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